

TECHNOLOGY DEPARTMENT

The

Refrigeration Service Engineer

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DEC 28 1948
DETROIT

VOL. 16, No. 12

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DECEMBER - 1948

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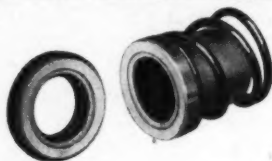
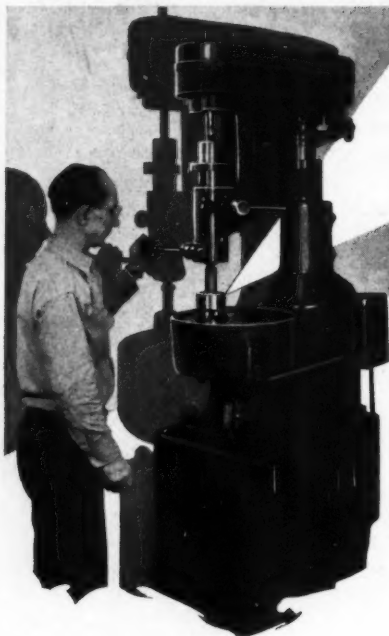
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6, MISSOURI



CHICAGO SEALS



with
**PRECISION
LAPPED
SURFACES**

Combining highest human skill and scientific precision machine lapping, CHICAGO SEALS are accurately finished to

MILLIONTHS OF AN INCH

Careful inspection assures the highest quality and trouble-free operation.

FOR BETTER PERFORMANCE USE

**CHICAGO
VALVE PLATES**

SOLD THROUGH LEADING



**CHICAGO
SEALS**

REFRIGERATION WHOLESALERS

Send for Bulletin 803

CHICAGO SEAL CO.

**332 S. HOYNE AVE.
CHICAGO 12, ILL.**

THE REFRIGERATION SERVICE ENGINEER, Nickerson & Collins Co., Publishers, 433-435 N. Waller Ave., Chicago 44, Ill. Published monthly. Vol. 16, No. 12, December, 1948. Entered as second-class matter March 4, 1938, Chicago, Ill., under the Act of March 3, 1879. Additional entry at Beloit, Wis., April 15, 1948. Copyright 1948. Subscription in the U. S. \$3.00 per year, other countries \$4.00.

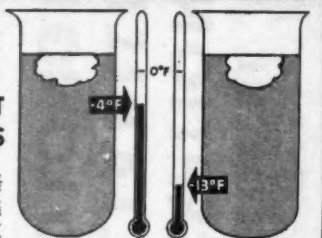
The Ansul Research Staff

CONTINUING REPORT ON:

WAX SEPARATION FACTS

SAME OIL but DIFFERENT SHIPMENTS

An example of wax separation in two samples of presumably the same oil. Both tests were prepared with a 10 per cent concentration of oil in the refrigerant. Sample on the left separated wax at -4° Fahrenheit while the sample on the right did not separate wax until -13° Fahrenheit. In purchasing oils for low temperature refrigeration, specify wax separation temperature.



by the
Ansul
Wax-Oil
Separation
Method

● The temperature at which wax separates from an oil in oil-refrigerant mixture is influenced by three determining factors:

1. The nature of wax in the oil.
2. The amount of wax in the oil.
3. The amount of oil in the oil-refrigerant mixture.

Different oils possess different wax separation characteristics.

The nature and amount of wax content varies in different oils and may even vary in different samples of supposedly the same oil taken from different shipments.

These inconsistencies confuse the engineer in his efforts to select or recommend suitable lubrication for low temperature refrigerating systems and, to

alleviate this condition, Ansul Chemical Co. is ready and anxious, at all times, to co-operate with refrigeration engineers and refrigeration service engineers.

REMEDIES

To eliminate wax trouble in expansion valves and coils:

1. Use an oil which separates little or no wax from its mixture with the refrigerant at the operating temperature of the valve.
2. Install an oil trap to cut down the amount of oil (and consequent wax) circulating with the refrigerant.

ANSUL WHOLESALERS are ready and equipped to render an intelligent, co-operative service to refrigeration engineers and maintenance men on problems which arise from time-to-time in the operation of refrigerating systems.

FOR EXAMPLE:

Samples of ice machine oils, submitted by users of Ansul Refrigerants to Ansul Wholesalers are tested by Ansul laboratories without charge by the Ansul Wax-Oil Separation Method. This approved method, developed and standardized especially for use in connection with oils used in refrigerating systems, provides an accurate determination of the temperatures at which wax separates from an oil-refrigerant mixture.

SEND FOR THIS BULLETIN

An informative reprint, "The Separation of Wax from Oil-Refrigerant Mixtures," will be sent on request. No obligation. Just address...

*REG. U. S. PAT. OFF.



ANSUL REFRIGERANTS ARE AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

ANSUL CHEMICAL COMPANY

REFRIGERATION DIVISION, MARINETTE, WISCONSIN

DISTRIBUTORS FOR KINETIC'S "FREON 11," "FREON 12," "FREON 21," "FREON 22," "FREON 113" AND "FREON 114"

December, 1948

THE REFRIGERATION SERVICE ENGINEER

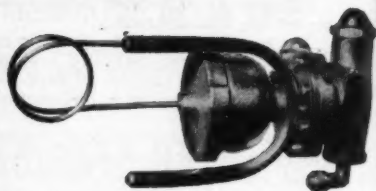
"Detroit" Thermostatic Expansion Valves

offer
**EXCEPTIONAL
RELIABILITY
AND LONG LIFE**

Year after year "Detroit" Thermostatic Expansion Valves stay on the job—give reliable, trouble-free service—rarely require servicing or replacement.

Here is a veteran which shows what "Detroit" expansion valves can do. This No. 663 Thermostatic Expansion Valve controlled refrigeration in an apartment house for 17 years before system changes brought about its retirement.

During that time, it gave no trouble—required no attention whatever. It is in operating condition



**Veteran Valve
Serves 17 Years**

This "Detroit" No. 663 Bellows Type Thermostatic Expansion Valve served 17 years without trouble in an apartment refrigeration plant. It is in operating condition today.

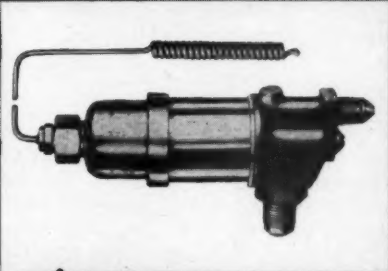
an apartment house for 17 years before system changes brought about its retirement.

During that time, it gave no trouble—required no attention whatever. It is in operating condition



No. 673—Another Record Maker

"Detroit" No. 673, the modern counterpart of No. 643. It has made, and is making, records of reliability on countless installations.



No. 673

The Modern Counterpart

"Detroit" No. 673 Thermostatic Expansion Valve is the modern counterpart of this veteran. It has the same built-in durability and reliability. In countless installations, it is making valve history. Among Thermostatic Expansion Valves, it is "the standard of the industry." "Detroit" Gas-Charged Thermostatic Expansion Valves provide better control—longer, trouble-free service.

DETROIT LUBRICATOR COMPANY

DIVISION OF AMERICAN RADIATOR & Standard Sanitary CORPORATION
General Offices: 5900 TRUMBULL AVENUE, DETROIT 8, MICHIGAN
Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

5172



"DETROIT"

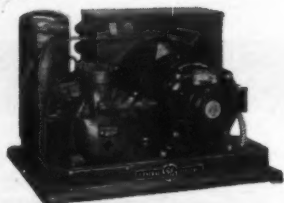
"DETROIT" HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER ACCESSORIES
"DETROIT" EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

Serving home and industry

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON



Here's a new **SMALL** unit
with **BIG** unit features



PACKED with the sales appeal only good engineering can give, the new General Electric Type CW Condensing Units embody big unit advantages rarely found in fractional hp machines.

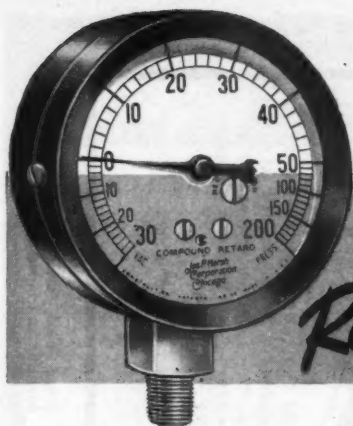
For example, a forced feed lubrication system. And the G-E lubrication system has only one moving part which provides ample oil for every "wear point" of the compressor. That's one reason why G-E units last longer, operate more smoothly and give your customers the kind of dependability that helps your reputation.

The CW line, ranging from 1/6 hp to 1-1/2 hp is designed so that many vital parts are interchangeable. For example, the same shaft seal is used throughout the entire line. This means lower parts stock, lower overhead, less time lost in obtaining the right part.

You'll find every installation of this new General Electric line a real reputation and business builder. Call your G-E representative for full details. General Electric Company, Air Conditioning Department, Section R81212, Bloomfield, N. J.

GENERAL  ELECTRIC

Better Refrigeration



*Closer reading
in the Normal
Range*

**-when you use the new MARSH
Compound Retard Gauge**

One more shining example of a Marsh refrigeration instrument particularly well fitted to its job is this new Compound Retard Gauge. It provides a full range of both vacuum and pressure indication for systems using sulphur dioxide, methyl chloride, Freon and other refrigerants that will not deteriorate brass, but its retarded movement permits easy, close reading in the important range from zero to 50 lbs.

Produced in a handsome, business-like black steel case with pyralin crystal, this compound retard gauge is one more welcome addition to the Marsh line of quality refrigeration instruments—standard pressure and compound gauges, ammonia gauges, corresponding pressure-temperature gauges, remote reading thermometers and the popular new Marsh "Serviceman" line in single and 4-scale types as briefly described opposite.

All Marsh refrigeration instruments are available with the "Recalibrator"—quickest and best way to correct a gauge or thermometer that has been knocked out of adjustment. Ask for new catalog sheets covering the Marsh line.

JAS. P. MARSH CORPORATION
DEPT. Q, SKOKIE, ILLINOIS



New 4-scale "Serviceman"

An all-purpose remote-reading serviceman's thermometer. Embodies all the features of the single scale "Serviceman" (below). In addition, shows equivalent pressures for Freon, sulphur dioxide, and methyl chloride.



Standard Serviceman

Checks them to 30 below. Has five feet of tubing, neatly concealed in case when not in use, slender enough to pass between gasket and jamb of closed refrigerator door. Large scale production has made it possible to reduce its price, making it a still more remarkable value.

MARSH

Refrigeration Instruments

BUY FROM YOUR WHOLESALER



ON HENRY DRIERS
THIS *Hiss* MEANS OK!

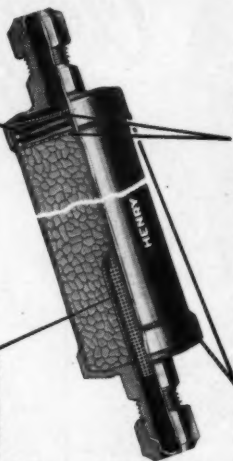
The Hiss a Henry Drier emits when its seal cap is loosened is the escaping rush of dehydrated air sealed inside. This hiss assures you your Henry Drier does not leak and is in factory-dry condition. It means you are installing a 100% efficient, leak-proof drier on your job. It guarantees removal of all moisture from the refrigerant with practically no pressure drop. It means you can be completely confident in the drier you install.

HENRY VALVE CO.
3260 W. Grand Ave., Chicago 51, Ill. • Cable: HEVALCO Chicago

ONLY HENRY DRIERS GIVE YOU ALL THESE FEATURES

PATENTED DISPERSION TUBE... prevents channeling, insures maximum utilization of Silica Gel to remove moisture and impurities. Low pressure drop permits the use of driers on suction lines.

SPRING COMPRESSED DEHYDRANT... exclusive Henry feature, keeps Silica Gel tightly packed, eliminates powdering or clogging of screens.



FORGED ONE-PIECE END CAP-FITTINGS... machined from one forging. Withstands all installation strains. Leak proof.

DOUBLE SCREEN PROTECTION... filters out particles as small as .003" diameter. Stands any system pressure.

Sold by leading wholesalers

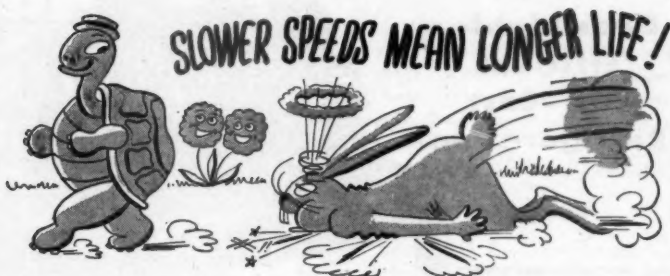


Control Devices, Valves, Driers, Strainers and Accessories for Refrigeration and Air Conditioning and Industrial Applications.

BRUNNER
SINCE 1906

REFRIGERATION helps you serve better

Memo to Shrewd Business Men



No fairy tale this: you use refrigeration units in your business only because they are essential to a profitable operation. Pump speeds, condensor tubes, suction areas, and other technical contributions to "slower speeds mean longer life" we'll leave to Brunner's factory representative to explain in detail.

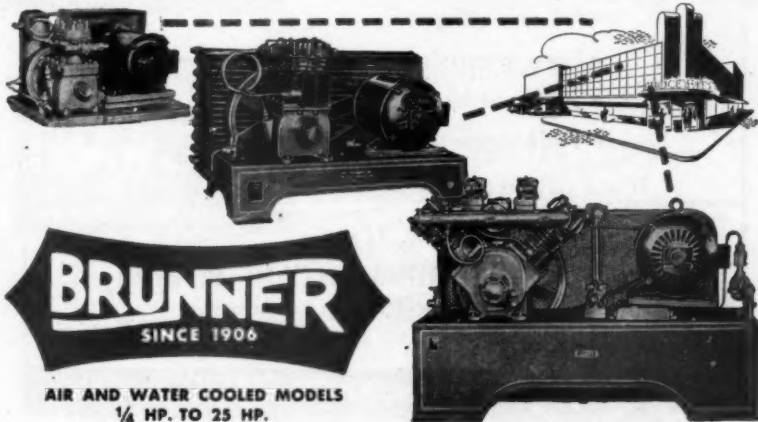
Here is today's version: refrigeration units are too important for hurried selection. Slow up, take time to *compare* design and con-

struction details. *Check* the experience of other users. Longer life comes with profitable, worry-free installations; prompt deliveries; long-lasting customer satisfaction.

Write us. Spend a few minutes with Brunner's representative and know why plant capacities have been greatly increased.

**BRUNNER
MANUFACTURING CO.**

Utica 1, New York, U. S. A.



BRUNNER
SINCE 1906

AIR AND WATER COOLED MODELS
1/4 HP. TO 25 HP.

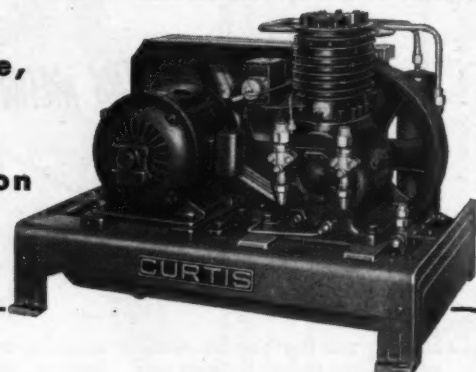
SERVICE ENGINEER

7

December, 1948

Why **CURTIS**

**Means
Dependable,
Efficient
Low-Cost
Refrigeration**



*F*or years the name of Curtis on refrigeration and air-conditioning equipment has stood for highest quality, trouble-free operation. Curtis advantages include:

- Timken Bearings.
- Extra large condensers—require less power.
- Pressure oiling.
- Finest materials—precision construction.
- Slow speeds—longer life.
- Wide range of sizes—air and water cooled.

It will pay you to investigate the Curtis line first.

CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company

1952 Kienlen Avenue St. Louis 20, Missouri

B573C

94 Years of Precision Manufacturing

*Men like you wrote
this advertisement*



**"USING
NOTHING BUT
THAWZONE"**

"We learned that quite a number of our dealers were using Thawzone and eliminating expansion valve freeze-ups. I am now with a company doing a large volume of commercial refrigeration business, probably 75 per cent of which is low temperature installations. We are using nothing but Thawzone in all our applications . . . Richard Markley, Jr., Hodge's, Liberty, N. Y."

**"USED FOR
THE PAST
EIGHT YEARS"**

"We have been using Thawzone for the past eight years in almost all of our low temperature systems and many of our medium temperature jobs. We have always found it to eliminate all moisture troubles on the first application. We have never found any deteriorating effect from the use of Thawzone . . . John H. Mayer, Mayer Refrigerating Engineers, Rutherford, N. J."

**"USES
THAWZONE ON
ALL NEW JOBS"**

"Every new job has Thawzone directly applied into the receiver and strainer, as I have yet to see any such equipment in which every piece is absolutely dry. On service jobs we inject Thawzone into both the strainer and crankcase. I have never had any adverse conditions arise in any system from the use of Thawzone . . . Harry H. Spear, Refrigeration Service Engineer, Danville, Ill."

Your refrigeration wholesaler has it

THAWZONE

PATENTED

The PIONEER FLUID DEHYDRANT

HIGHSIDE CHEMICALS CO.
195 VERONA AVE., NEWARK 4, N. J.

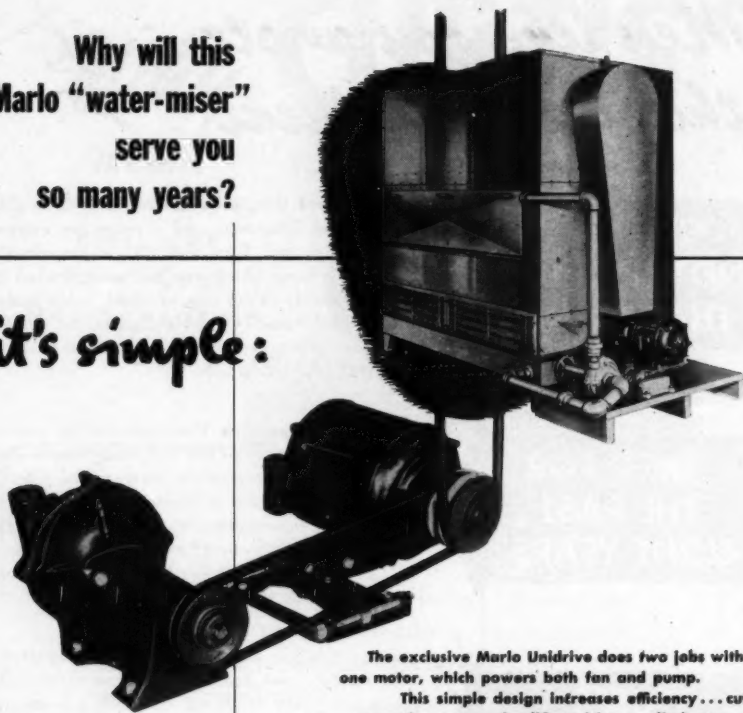
ALSO MAKERS OF

T-TRACE*
REFRIGERANT
LEAK DETECTOR

*TRADE MARK REG. U. S. PAT. OFF.

Why will this
Marlo "water-miser"
serve you
so many years?

it's simple:



The exclusive Marlo Unidrive does two jobs with one motor, which powers both fan and pump.

This simple design increases efficiency... cuts operating cost... simplifies wiring... eliminates special extended-shaft motors and pumps... permits easy field replacement.

That's just one typical reason why many Marlo Evaporative Condensers and Cooling Towers are still faithfully saving up to 95% of normal water consumption and cost... after 10 years of daily service.

For lasting economy specify...

***MARLO COOLING TOWERS
AND EVAPORATIVE CONDENSERS**

MARLO-HEAT TRANSFER
Since 1908



Kroger Supermarket in St. Louis uses a CT-20 twenty-ton Cooling Tower to handle condensing units for entire refrigeration system. Kroger is using these units in new and remodeled supermarkets throughout the Midwest Territory.

MARLO COIL CO. / ST. LOUIS 10, MO.



all tubes wide open!

**how will you
feed 'em equally?**

A valve with separate distributor permits a single coil circuit to "flood through" to the valve's thermal bulb. The bulb and valve respond, throttling all other coil circuits. This "starves" much of the evaporator surface, often cutting capacity as much as 1/3.

ALCO Multi-Outlet Thermo Valves prevent "short-circuiting" or poor distribution. In thousands of installations they have increased capacity 1/4 to 1/3 by feeding circuits equally.

- Refrigerant is accurately metered at point of expansion within valve body, before separation of gas and liquid
- All circuits are equally fed regardless of load changes
- Positive, stable control—no "hunting" or "cycling"

Result: less running time—lower operating costs. Available at your wholesalers for all refrigerants and applications: 1/2 to 50 tons FREON-12, 2 to 36 outlets. Ask for our Bulletin 180.

**ALCO
MULTI-OUTLET THERMO VALVES**



Designers and Manufacturers
of Thermostatic Expansion
Valves; Evaporator Pressure
Regulators; Solenoid Valves;
Float Valves; Float Switches.

ALCO VALVE CO.

857 KINGSLAND AVE. • ST. LOUIS 5, MO.

3456

Choice of the Field!



Upper illustration: Standard Dome Cooler with air emitting in all directions.



Lower illustration: Two-way Dome Cooler with air flow limited to two directions.

PEERLESS *DOME* COOLER

● For top performance in reach-in and walk-in coolers, install the PEERLESS DOME COOLER, the motor-driven cooling coil with a long history of satisfactory service. In the new, improved 1948 model you have the finest performance yet in this type of cooling coil. It's easily installed and occupies minimum space. The handsome spun aluminum casing holds precision-engineered parts which insure dependable, trouble-free operation. Air is drawn up in the center of the unit, cooled, and discharged horizontally along the fixture ceiling to drop down the side walls. This efficient, constant cooling cycle maintains high humidity, keeping stored products at the peak of their quality. Use PEERLESS motor-driven cooling coils. You'll find that today's outstanding cooling coils are PEERLESS-MADE!

CASCADE COOLER This motor-driven coil combines radiant and convection cooling. Even the ornamental casing is a cooling surface! Cold air cascades downwardly from the face of the unit, which hugs the wall, saving storage space.

UNIT COOLER This is the new PEERLESS "PIE PLATE" with all primary and secondary surfaces IN THE AIR STREAM. There is no waste surface in this condensed package of refrigeration power.

FOR BOX TEMPERATURES ABOVE 32°
FOR USE WITH FREON, METHYL CHLORIDE
AND SULPHUR AS REFRIGERANT
SEND FOR ENGINEERING DATA AND PRICE LISTS



PEERLESS of AMERICA, Inc.

2901 LAWRENCE AVE. CHICAGO 25, ILLINOIS, U.S.A.

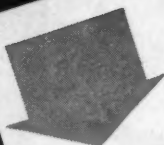
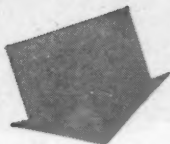


CASCADE COOLER



UNIT COOLER

VIRGINIA Refrigerants



**"EXTRA DRY
ESOTOO"**

Liquid Sulfur Dioxide

"V-METH-L"

Methyl Chloride

**consistently pure
consistently sure**



VIRGINIA *Refrigerants*

West Norfolk • New York
Boston • Detroit

VIRGINIA SMELTING COMPANY
WEST NORFOLK, VA.

Distributors for
Kinetic's "Freon" Refrigerants

SERVING INDUSTRY FOR 50 YEARS

**"EXTRA DRY
ESOTOO"
"V-METH-L"**

Available from
wholesalers
coast to coast





It's the New Tecumseh Hermetic Motor Compressor



Hermetics and you'll see why this new Tecumseh unit is a "natural" for your "limited space" applications.

COMPACT! Just 9 3/4" in diameter by 5 17/32" thick! Compare its size to other

Take a good look at this new Tecumseh single cylinder, 1/10 horsepower Hermetic. Check its over-all dimensions, its amazing new compactness of design. Consider its internal spring mountings that assure smooth, quiet, vibrationless operation. Then add positive forced feed lubrication, ample provisions for oil cooling, plus all the other outstanding engineering features that characterize the millions of Tecumseh units already in service. These are reasons enough, we believe you'll agree, why this latest Tecumseh Hermetic has been acclaimed a major contribution to the refrigeration industry.

Adaptable to apartment, midget and regular domestic refrigerators, water coolers, small beverage coolers and vending biological cabinets, and many other applications where limited space is a controlling factor.

TECUMSEH PRODUCTS COMPANY
Tecumseh, Michigan



Chieftain
INDUSTRY.

WORLD'S LARGEST INDEPENDENT PRODUCER OF COMPRESSORS AND CONDENSING UNITS FOR THE REFRIGERATION



PAGE
after

PAGE tells this story

Want to save time, trouble, and profit-eating call-backs on your refrigeration control replacements? Then make the Cutler-Hammer refrigeration control catalog your standard guide on replacements. Here you will find "specific-fit" units which are not merely listed but already manufactured by Cutler-Hammer for more than 1,000 individual refrigerator models which the industry has produced since 1925. No "modifying", no fussing, no compromises, when you put in C-H "specific-fit" replacement control units. And you'll also quickly see how the widely-known Cutler-Hammer name

(advertised in The Saturday Evening Post, Time, Newsweek, American Home, Better Homes & Gardens, House & Garden, etc.) builds customer confidence and good will. The C-H refrigeration control catalog, as well as the items you need, are available through your authorized C-H refrigeration wholesaler. Do not forget, this C-H refrigeration control line includes the outstanding *general purpose* replacement control (9521N9) for use with motors having "built-in" overload protection. CUTLER-HAMMER, Inc., 1363 St. Paul Avenue, Milwaukee 1, Wisconsin.

You know you're right when you use C-H "specific-fit" controls



9521M43 C-H "specific-fit" for Briggs 1938 models



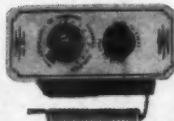
9521N95 C-H "specific-fit" for Philco 1940 models



9562N376 C-H "specific-fit" for Mayflower and Truper 1933-34-35-36 models



9521N96 C-H "specific-fit" for Gale 1941 models



9562N95 C-H "specific-fit" for Moffat 1936-37 models

Featured by Cutler-Hammer refrigeration wholesalers and recommended by alert service dealers from coast to coast.

BACK AGAIN



HEAVY DUTY BEER COOLERS

by Temprite

Out of production since before the war, Temprite heavy duty beer coolers are back again to help you make more money. Now is the time! This is the season! Tell your customers

about Temprite. You can now offer 7 new improved models for every type of beer cooling application. Outstanding features include specially shaped stainless steel coils, compact size and patented temperature control.

Write or wire now for details.

TEMPRITE PRODUCTS CORP.

Originators of Instantaneous



Liquid Cooling Devices

45 PIQUETTE AVENUE

DETROIT 2, MICHIGAN



Copeland engineering

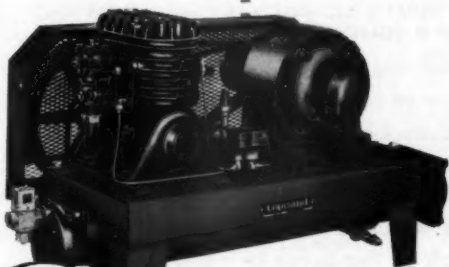


Copeland production



Copeland quality control

These
add up
to easier
sales . . .
for you !



Especially since Copeland follows through with consistent advertising and merchandising helps. Copeland makes every prospect a potential sale by maintaining the most complete and flexible line in the industry.

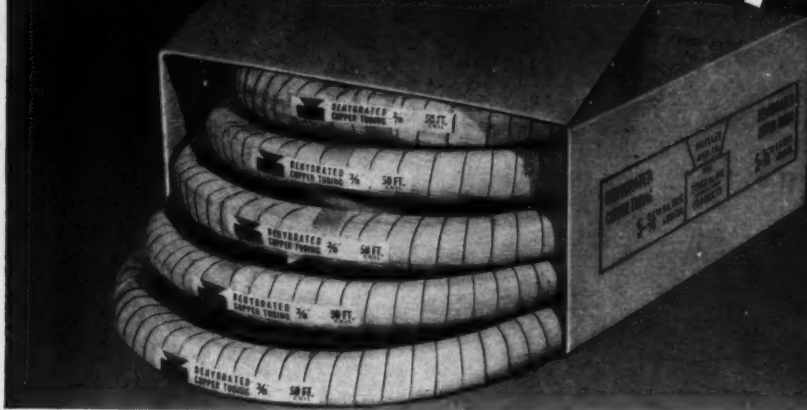
Copeland

DEPENDABLE *Electric* REFRIGERATION

COPELAND REFRIGERATION CORPORATION SIDNEY, OHIO

Manufacturers of:
Refrigeration Units,
(Open-type and
Copelamatic),
Water Coolers, Re-
frigerators.

Dehydrated COPPER TUBING!



PERFECTLY WRAPPED—SEALED—AND CARTONED—FOR PROTECTION AND CONVENIENCE IN STOCKING—

★ 1/8 THRU 1/4 .030 WALL ★ 5/16 THRU 1/2 .032 WALL ★ 5/8 THRU 3/4 .035 WALL
50 FT. LENGTHS

Mueller Brass Co. Dehydrated Copper Tube Coils are now being cartoned as an added precaution against damage and to facilitate greater ease in handling and stocking.

Within the carton, each coil is carefully wrapped and labeled for your convenience. Our Dehydrated Copper Tubing is consistently bright, clean and as dry as is humanly possible to make it. It is uniformly annealed dead soft so that it can be easily formed, bent or flared without danger of fracture.

ORDER FROM YOUR WHOLESALE

MUELLER BRASS CO.
PORT HURON, MICHIGAN



From an insulated body

to a 45°-50°
refrigerated
truck



*Name on request

As simple as 1-2-3

with KOLD-HOLD'S
new *Pakage* truck unit

Hi-temperature refrigeration of perishables is achieved quickly, easily and economically through the installation of the new "Pakage" truck unit. This unit is a completely self-contained refrigeration system which you can install (see right) in from two to three hours without special body work, holders or brackets. It works well in any properly insulated body, regardless of age and it maintains a 45° to 50° temperature throughout the longest day's deliveries. The unit recharges itself by simply plugging in to any 110V outlet. 220V motor is available if desired. Write for the "Pakage" truck unit bulletin for information.

1. Cut two holes in the floor of the truck for air intake and discharge. Dimensions and measurements come with the unit, as well as complete installation instructions.
2. Push the unit into position over the holes and bolt securely into place. This is all the installation required.
3. Plug into 110V outlet. Twenty foot rubber covered cord is supplied with the unit. If desired, a connection box may be installed outside the body for greater convenience.

Baffle plate induces complete air circulation.

Insulated compartment holds 1 HP compressor and electric motor.



Two Kold-Hold "Gold-Cord" Pumps have 25,000 B.T.U. capacity.

Strong steel angles drilled for bolting to the truck floor.

WRITE FOR THIS FREE LITERATURE!

Efficient Truck Refrigeration, "Pakage" Truck Unit, and separate bulletins on Truck Refrigeration for Meat, Milk, Ice Cream and Frozen Foods.

KOLD-HOLD

Jobbers in Principal Cities

KOLD-HOLD MANUFACTURING CO.

PROTECTION
protects every step of the way

STORAGE

502 E. Hazel St., Lansing 4, Michigan

SERVICE ENGINEER

19

December, 1948

First and Only!

Load Carrying
2-POLE SWITCH

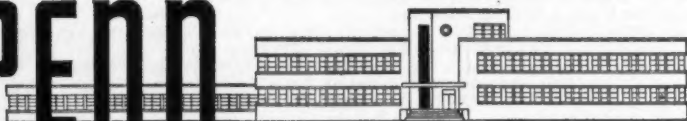
DIRECT READING
Calibrated Scale



PENN
270
SERIES

Write now for Bulletin No. 2652 with full details about the Penn 270 Series refrigeration and air conditioning control that sets a new standard of versatility, simplicity, efficiency and dependability. **Penn Electric Switch Co., Goshen, Indiana.** Export Division: 13 E. 40th St., New York 16, U. S. A. In Canada: Penn Controls, Ltd., Toronto, Ontario.

PENN



AUTOMATIC CONTROLS

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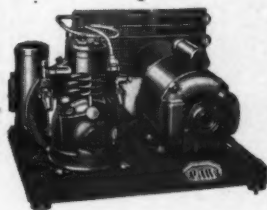
PAR 17

The popular

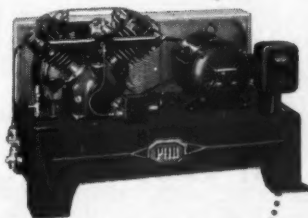
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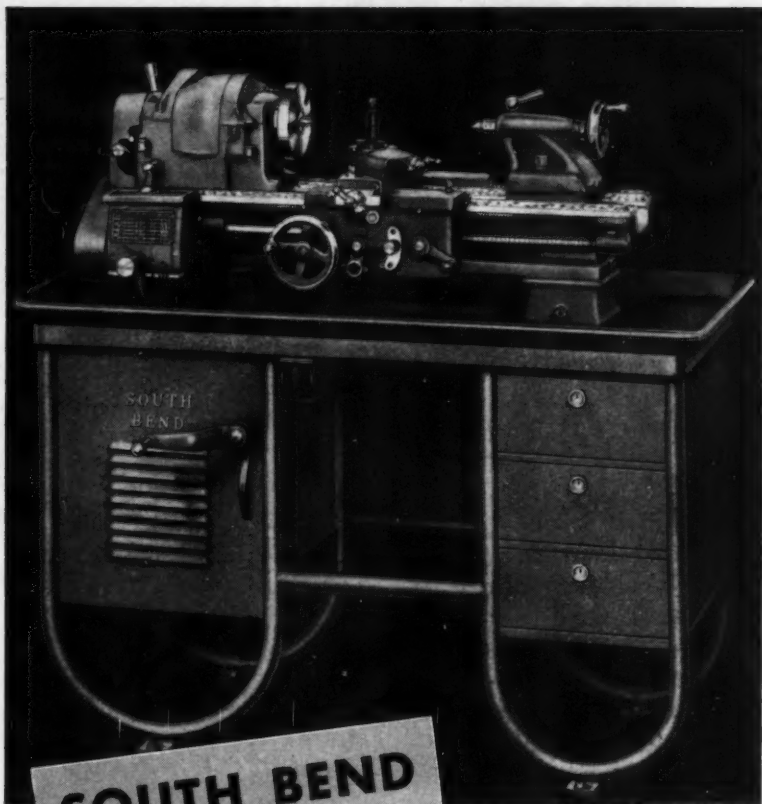
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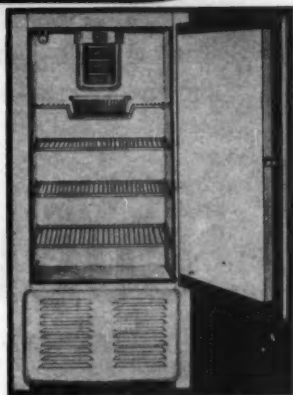
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TE60

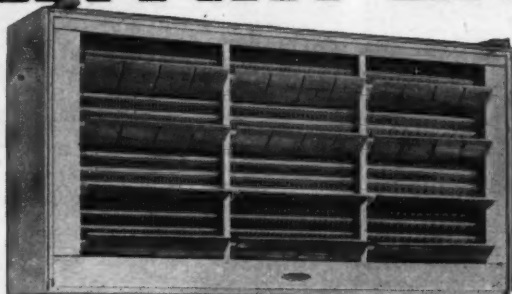
23 $\frac{1}{4}$ " wide x 18" deep (on body)
 20 $\frac{1}{2}$ " deep (over hardware) x 55" high. 6 cu. ft. net food storage and 9.6 sq. ft. shelf area including qt. milk bottle space. Large cooling unit capable of making 6 lbs. of ice per freezing.



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66	7500	7500
88	10000	10000
110	12500	12500
132	15000	15000
154	17500	17500
176	20000	20000
198	22500	22500
220	25000	25000
242	27500	27500
264	30000	30000
286	32500	32500
308	35000	35000
330	37500	37500
352	40000	40000
374	42500	42500
396	45000	45000
418	47500	47500
440	50000	50000
462	52500	52500
484	55000	55000
506	57500	57500
528	60000	60000
550	62500	62500
572	65000	65000
594	67500	67500
616	70000	70000
638	72500	72500
660	75000	75000
682	77500	77500
704	80000	80000
726	82500	82500
748	85000	85000
770	87500	87500
792	90000	90000
814	92500	92500
836	95000	95000
858	97500	97500
880	100000	100000
902	102500	102500
924	105000	105000
946	107500	107500
968	110000	110000
990	112500	112500
1012	115000	115000
1034	117500	117500
1056	120000	120000
1078	122500	122500
1100	125000	125000
1122	127500	127500
1144	130000	130000
1166	132500	132500
1188	135000	135000
1210	137500	137500
1232	140000	140000
1254	142500	142500
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1364	155000	155000
1386	157500	157500
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1496	170000	170000
1518	172500	172500
1540	175000	175000
1562	177500	177500
1584	180000	180000
1606	182500	182500
1628	185000	185000
1650	187500	187500
1672	190000	190000
1694	192500	192500
1716	195000	195000
1738	197500	197500
1760	200000	200000
1782	202500	202500
1804	205000	205000
1826	207500	207500
1848	210000	210000
1870	212500	212500
1892	215000	215000
1914	217500	217500
1936	220000	220000
1958	222500	222500
1980	225000	225000
2002	227500	227500
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7194	817500	817500
7216	820000	820000
7238	822500	822500
7260	825000	825000
7282	827500	827500
730		

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366-18

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THE REFRIGERATION SERVICE ENGINEER

The
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of
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Published Monthly by

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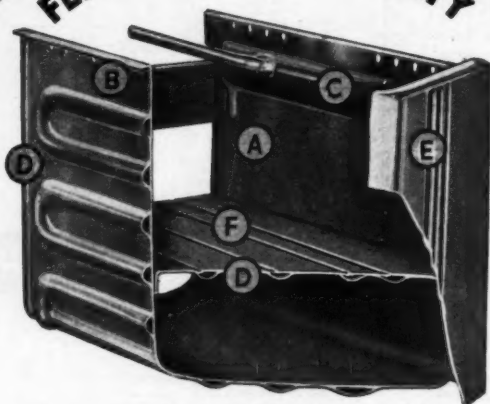
Vol. 16 DECEMBER, 1948 No. 12

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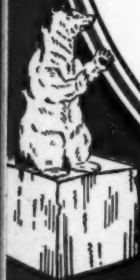
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STANDARD *Stainless Steel* EVAPORATORS

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- A—Continuous Stainless Steel Construction
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ISSUE ▶

ALIGNING doors, replacing door gasket and adjusting the cabinet hardware on the modern refrigerator requires more "know how" than one would think if the right kind of job is going to be done, and the right kind of job is necessary on the closely designed hermetics which will not permit too much loss of refrigeration. The article on page 31, "Servicing the 1948-48 Model Admiral Dual Temp" provides well illustrated instructions on the procedure necessary, much of which applies to all makes of refrigerators.

TWO worth-while pointers on how to get out of difficult situations are offered this month in W. L. Cotton's article under the heading of "This Business of Service," beginning on page 38. The article is an entertaining narrative of two partners' experiences.

THE author, Edward Dowis, of the series "Electricity as Applied to Refrigeration" writes this month on alternating current motors of the single and three phase and the two voltage motors, providing winding arrangements and line connections. The article begins on page 41.

ACHEAP, odorless, safe and clean smoke for testing air circulation in air conditioned or refrigerated spaces, is not always easy to get when you need it. At least it wasn't for one contributor to the Service Pointer department, until he found a common chemical available at the corner drugstore that serves the purpose. Read his suggestion on page 46.

ABUTCHER and his competitors in the same community are having equally bad experiences with natural convection

coils or with forced convection coils. Which should he install? That is the problem in the Question and Answer department on page 48.

A COMPLETE report of the "11th Annual RSES Convention and REMA Educational Exhibit", "The Ladies Auxiliary Annual Convention" and "NARC 3rd Annual Meeting" appears in this issue beginning on page 49. New officers for each of the associations are listed together with pictures and a complete account of the activities.

AN improved truck refrigerating unit is described on page 102 which is interesting because of its completely automatic operation. On page 106 is a description of a new gun which shoots pipe fasteners into concrete. It's a war-time development, now reaching the public.

THE fourth in the series of refrigeration educational conferences and exhibitions will be held in Birmingham, Alabama, February 4, 5 and 6, 1949, which will complete the four regional shows planned for the off year between All-Industry shows. Complete details of the Alabama meeting appear on page 61.

COVER

THE front cover this month is a view of the George Baumgardner Electric Motor Service shop in Cleveland, Ohio. Mr. Baumgardner, who is a member of the Refrigeration Service Engineers Society, Cleveland Chapter, has had many years' experience in motor repair work and was at one time employed by United Motor Service. He offers his services to the entire trade.



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whether the System
is Wet or Dry
I use
the

DFN MOISTURE INDICATOR*

IN A few minutes, with the DFN Moisture Indicator, you know whether the trouble in a system is due to moisture—you learn how wet it is—determine the lowest temperature at which the system can operate safely—know positively that the system is dry when you finish installation or servicing, to prevent expensive call-backs.

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Newark 3, N. J.

Servicing the 1947-48 Model

Admiral Dual-Temp

Much of the instructions contained here on the adjustment of doors, gaskets, locks and hinges and on the sealing of cabinets could apply to any of the modern makes of refrigerators and certainly the experience gained through the adjustment of the Dual-Temp will aid greatly in other makes.

THE 1947 and 1948 Dual-Temp Model 957, 758 and 958 refrigerators are very similar to Models TD946 and TD746 which were described in the October, 1947 issue of THE REFRIGERATION SERVICE ENGINEER, but there are a number of distinctly new features. Service is essentially the same insofar as troubleshooting is concerned. The following parts are identical: temperature controls, starting relay, restrictor coil, Sterilamp and transformer, power cord, lamps and sockets, wiring, secondary tubing and transfer plate, cabinet door panels and hardware, locker doors and plastic shelf studs.

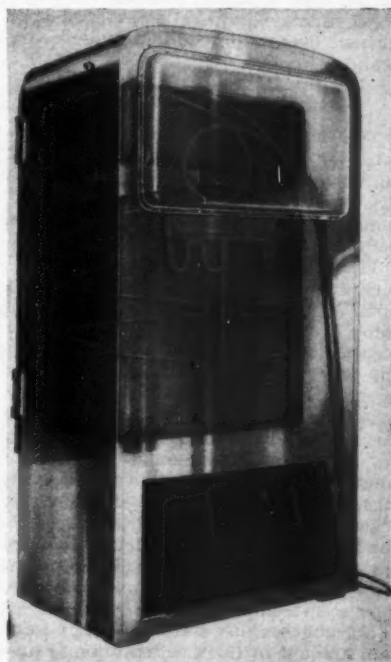
The most important new feature is Moistrol. The moisture condensed on the walls of the food liner, runs down to a shallow trough embossed around the bottom of the liner and then into a drain through the liner bottom. A plastic cap over the drain tube, and the shape of the rubber grommet around the tube, form a water trap to prevent free passage of air either into or out of the liner. The drain tube is tightly sealed at the liner bottom and at the cabinet bottom with rubber grommets to seal the cabinet insulation against moisture.

The new plastic drip pan is located at the top of the machine compartment and is accessible by opening the machine compartment door and pulling the tray up slightly and out. The water in the tray is automatically evaporated by a "hot gas" tubing loop between the com-

pressor and condenser. This tubing lays just off the bottom of the drip pan.

The customer should clean the drain tube with a small bottle brush and wash the drip pan once a week with warm, soapy water. If any spillage of food or liquid reaches the drain, it should be cleaned and rinsed immediately.

All shelving is changed. The new shelving is made of stamped aluminum instead of being an extrusion assembly. It is stronger and easier to clean. A new full-size, perforated bottom shelf with slides for the vegetable pan supercedes the old glass shelf, shelf frame and pan slide arrangement used in TD746



Xray view of refrigerating system through walls of Dual-Temp refrigerator.

and TD946. The elimination of the old drip pan from the interior of the liner permits the use of a full width vegetable storage pan which increases the effective storage capacity of the refrigerator.

A new sealed unit is required for the later models. This new unit has the moisture-evaporating tubing loop and a new method of supporting the locker designed to prevent cracking of the breaker frame (locker side support braces inside the cabinet insulation).

The old 24 tooth temperature control rods and knobs are replaced with improved 18 tooth rods and knobs to prevent the knobs from "stripping". A newly improved silent restrictor will be found on later production. The click of the raising and powering of the plunger as well as any hum is nearly inaudible.

The tubing on the back of the moist cold liner and the locker is held in place with springs, reducing the possibility of porcelain chippage experienced with the earlier type of tubing fastener welded to these liners. The door gasket and door fit have been improved to provide better sealing.

Excessive Moisture

The Dual-Temp is designed to maintain very high humidity in the moist cold compartment so that foods will not dry out even though uncovered. High humidity of course, means that the air is very moist.

Moisture from the room air which enters the refrigerator when the door is open condenses on the walls and flows into the drip tray. In hot humid weather, a great deal of moisture enters the refrigerator each time the door is opened. Under these conditions the user may complain of excessive moisture, since some of the moisture condenses on the shelves and food containers. Customer may also complain that the tin cans rust, and that cartons placed in the refrigerator become damp and soggy. Since the Dual-Temp will not pick up the moisture from foods, it is also very slow to pick up any moisture that condenses on containers or shelves.

For the reasons stated above, a certain amount of this condensation is unavoidable during the hot humid summer weather. Wherever a complaint is received, however, certain points should be

checked to make sure that the condition is not abnormal. These are given below. At the same time, the user should receive the above explanation.

Stopping Drip from Top

Sometimes moisture drips from the top of the compartment into food and the shelves. This is due to a thin film on the surface of the porcelain which causes the moisture to gather in large drops which drip off instead of spreading and running down the side walls. The remedy is quite simple. The top of the food compartment as well as the upper edge of the side and rear walls should be thoroughly scrubbed with powdered Bon-Ami. This treatment will last for a long time, but can be repeated whenever necessary.

Very often dishes or packages are pushed against the walls so that the water running down the walls runs onto them. This should be explained to the user.

The refrigerator must be level to permit proper drainage of the drip trough. The serviceman should make sure that the drip trough is pushed back firmly and is not clogged. The trough must be kept clean. Also adjust bottom shelf as described a little later.

The amount of moisture in the refrigerator will be excessive if the door gasket does not seal properly. Thus in all moisture complaints, the gasket should be checked every few inches all around the door in the usual manner. Should you find a poor seal at any point, make any adjustments required to correct this condition. Instructions for adjusting the door clearance on the hinge side, aligning the door, and adjusting the lock strike, are given in detail later. The door adjustment must be made in accordance with these instructions in order to assure a satisfactory gasket seal.

Cabinet Sealing

Since the cooling coils in the Dual-Temp are located in the insulation on the outside of the freezing locker and food compartment, the cabinet walls must be thoroughly sealed to prevent air and moisture from getting into the insulation to form frost on the cooling coils. If the cabinet seal is broken, air and moisture will penetrate the insulation and cause frosting of the cooling

coils, which will reduce the insulation efficiency and eventually ruin the cabinet.

Therefore, when performing any service operation such as removing the rear cover plate, the various gaskets and sealing compounds must be carefully replaced to assure proper sealing.

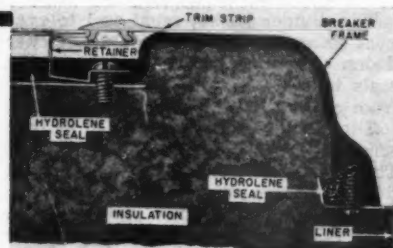


Fig. 1

When repairing any type of transportation damage, it is well worth while to lay the refrigerator on its back and carefully examine the machine compartment, especially where the sides of the cabinet are sealed to the top of the machine compartment. If any evidence of a cracked or open seam is found, the cabinet should be re-sealed with No. 40R permagum. Permatex No. 2, obtainable at automotive supply stores, may be used as an emergency substitute for permagum. Do not use sealing compounds that harden (become brittle). It is recommended that the serviceman have a supply of No. 40R permagum in his kit at all times.

Fig. 1 shows the assembly and sealing of the breaker frame to the liner and cabinet. Note that this method of mounting the breaker frame is radically different so that it cannot be removed in the same manner as in the conventional refrigerator. In the Dual-Temp, the liner is first bolted and sealed to the breaker frame. This assembly is next bolted and sealed to the cabinet. The trim strip covers the seal and is held in place by the tension in the retainer springs.

Door Adjustments

Do not try to correct door gasket seal by only adjusting the strike and adding shims. In many cases, this will be unsatisfactory since it does not correct the basic cause of the trouble unless the

other adjustments are made first.

To check the gasket seal, close the door on a strip of paper such as a writing paper or a dollar bill. When sealing properly, the gasket will lightly grip the paper as it is pulled out. Mark the door with a soft pencil where the gasket is sealing poorly. The marks will aid in visualizing the adjustments needed.

Note particularly how tightly the gasket seals along the hinge side. If the door is "crowding" the gasket on the hinge side, the compression of the gasket will resist the closing pull of the lock mechanism and thus cause a poor seal along the latch side of the door. See Fig. 2. Hinge adjustments should be made where this condition exists.

Hinge Side Pressure Adjustment

If the gasket seal is too light or too loose on the hinge side adjust as follows:

- a. Remove hinge covers by carefully prying under the rear bottom edges.
- b. Remove single small locking screw from each hinge.
- c. Loosen three large screws in top hinge and adjust out or in, until gasket

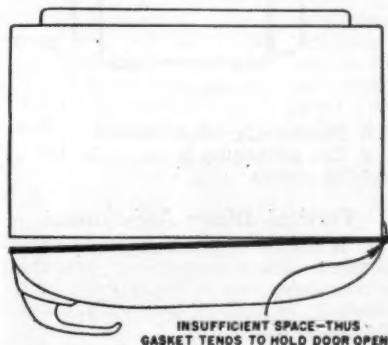


Fig. 2

pressure is normal above top hinge. Tighten one screw.

d. Repeat with bottom hinge making sure door is parallel with cabinet by measuring accurately the distance between door and cabinet above top hinge and below bottom hinge. Use a rule with a right angle tab at the end to insert under gasket so you can get a true measurement. A flexible 6 foot rule which rolls into a small case is good. See Fig. 3—A and B should be equal.

e. Check hinge side pressure from top to bottom. Disregard any minor low spots as they can be corrected as described later. The important point is to keep the door parallel with the cabinet while adjusting the hinges for correct gasket pressure.

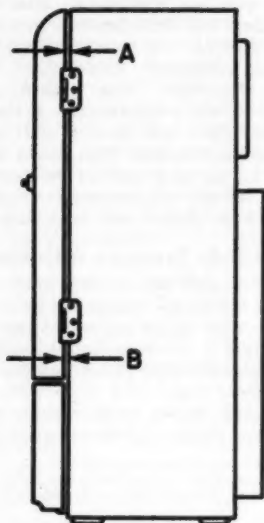


Fig. 3

f. Tighten six hinge screws.

g. Use permagum to seal holes left by locking screws.

Vertical Hinge Adjustment

a. If the inner panel strikes the temperature control escutcheon, preventing proper door closure, lower the door by notching the hinge slots upward, using a $\frac{1}{8}$ " round file.

b. If inner panel "climbs" on lock strike mounting causing poor latch action and poor sealing on latch side, raise the door by removing the hinge pin and putting the top hinge washer with the bottom one. The door can also be raised by notching the hinge slots downward.

Horizontal Hinge Adjustment

If door contour does not match cabinet, horizontal door adjustment is needed. The door may be shifted sideways by adding or removing shims under both hinges. Rotating the door is accomplished by shimming under one hinge only.

It is sometimes necessary to make a vertical adjustment after shimming under the hinges; check the clearance around the temperature control escutcheon and lock strike mounting. Adjust if necessary as explained under "Vertical Hinge Adjustment."

Adjusting the Divider Gasket

The divider gasket must seal to prevent excessive frost around the locker doors. However, if the divider gasket seals too tightly, it will keep the door from closing properly on the latch side.

The divider gasket is adjusted by four screws located under the divider gasket. The adjusting screws are the second and fifth screws, counting in from both sides of the door. (The other screws mount the divider support strip to the inner door panel.) See Fig. 4.

Check divider gasket as follows:

1. Remove latch strike and its mounting. Tighten flat headed screws under it.

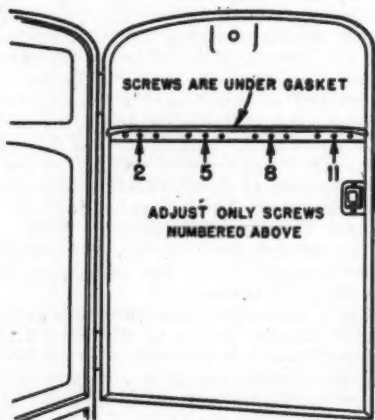


Fig. 4

2. Remove 1-inch metal button near top of inner door panel so light will stay on.

3. Sight along divider gasket with door nearly closed.

4. If divider gasket bulges toward breaker frame, tighten adjusting screws.

5. Recheck by sighting. It should make contact all along its length just as door closes.

6. At this time, observe any other place where the inside panel may be touching the cabinet.

7. See how much "push" is required to close the door. When hinge side pressure and divider gasket are adjusted properly, the door should close until it touches the cabinet when only light finger pressure is applied.

Aligning the Door

Push the door closed until the gasket touches the cabinet and note whether the door is parallel with the cabinet

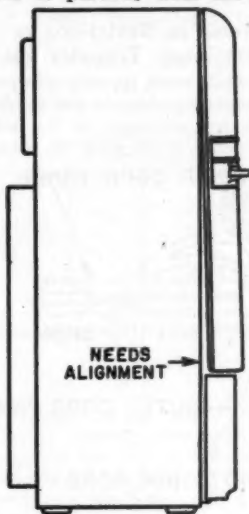


Fig. 5

along the latch side. Replace the strike, leaving it "out" as far as its slotted holes permit and measure the door clearance at the top and bottom as was done when adjusting the hinges. If the door is not parallel with the cabinet on the latch side so it "toes out" at the top or bottom, it is out of shape, but this does not mean that the outside metal door panel is warped. The shape of the door can be adjusted by aligning it with the cabinet, as described in the following:

To align the door make sure cabinet is level, then proceed as follows:

1. Loosen all the screws holding the inner and outer door panels together (these screws are under the gasket flap.) Do not loosen any of the screws under the divider gasket.

2. Roll up a magazine, newspaper or telephone book into a three-inch roll. Place it between door and cabinet at corner where door is too close to cabinet.

3. Push in on corner of door which is too far from cabinet until door is parallel with cabinet.

4. Close door several times to make sure it does not spring back. Repeat 2 and 3 if necessary.

5. Draw down the screws under the gasket until just snug. Do not draw down tight.

6. Recheck the door alignment. If the door edge pulled out of parallel with the cabinet when the inner panel mounting screws were snugged down, this means that some of the screws are exerting side pressure against the mounting slots in the inner door panel and thus pulling the entire door out of alignment. To remedy this condition, remove all but the corner mounting screws and realign the door. Tighten the corner screws to hold the door in alignment and then examine the screw slots around the edge of the inner panel. Widen any of the slots which interfere with mounting screws; the edges of slots can be gouged away with a small screwdriver.

Adjusting the Lock Strike

There are two adjustments on the lock strike: "in and out" and "sideways." The "sideways" adjustment should be made first by loosening the two screws (B, Fig. 6) that hold the strike to the cabinet. Move the strike until the lock

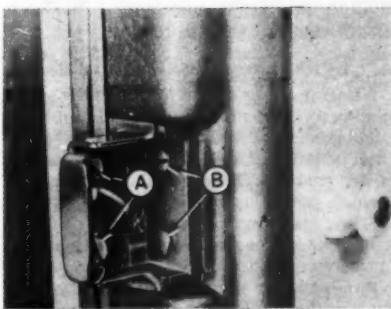


Fig. 6—Screws "A" control in and out adjustment. Screws "B" control sideways adjustment.

mechanism roller just clears the front straight edge of the strike and contacts the tongue. See Fig. 7.

Next loosen the two screws (A, Fig. 6) that mount the strike tongue. Adjust "in and out" by trial until good gasket

seal is obtained. Note that often gasket seal can be improved by moving strike out. Try several positions as the adjustment is rather critical. The seal will be poor if the strike is too far in or too far out.

Check divider gasket seal by drying breaker frame, then coating divider gasket with chalk or slightly soapy water. Close door gently, then open and



Fig. 7

note whether imprint of gasket appears all along breaker frame. Re-adjust divided gasket if necessary. Recheck gasket seal all around door.

Equalizing Gasket Height

After making all adjustments needed to assure good door alignment and uniform gasket pressure, "low spots" may exist because of inequalities in the height of the gasket. The seal can be improved at such points by pulling the gasket into the low spots as follows:

1. Loosen several inner panel mounting screws on both sides of the low spot.
2. Work the gasket toward the low spot by tightening down the screws behind the gasket while pulling it into the low spot.
3. As the gasket is thus stretched into the low area, the low spot will balloon up and the sections stretched into it will be slightly flattened. The net result is to equalize the height of the gasket.
4. The use of shims is advised only as

a last resort. When shims must be used, install them under the inner panel after lifting the gasket. This lifts the inside lip of the gasket. See Fig. 8. Shims installed in this manner cannot be seen and will not fall out when the gasket flattens with age. Shims may be made of thin cardboard, such as a butter carton. Do not shim between outer door panel and the gasket as this will allow air to leak into the door.

Noise in Restrictor or Sterilamp Transformer

There have been reports of a chattering or humming noise in the Dual-Temp that does not originate in the machine compartment. This noise is usually in

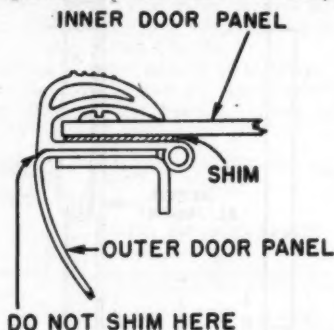


Fig. 8

the restrictor or the Sterilamp transformer, both of which are located in the rear wall of the cabinet. Normally these parts may emit a slight noise which will be noticeable when the cabinet door is open. If this slight noise becomes practically inaudible when the door is closed, it can be considered normal.

If the noise is quite noticeable even with the door closed, you can check its source as follows:

1. Turn the freezing locker control to maximum cold so the unit keeps running.
2. Turn the moist cold temperature control off. If the noise stops, it originates in the restrictor. If the noise continues, it is in the Sterilamp transformer.

Sterilamp transformer noise can be eliminated by wedging the coils in place with toothpicks. In some cases it may be necessary to loosen the mounting screws of the transformer and put rubber tape between it and the cabinet.

Noise from the restrictor can be transmitted to the cabinet if the restrictor coil touches the back wall of the cabinet or has insulation too tightly wedged between the coil and the cabinet that the noise will be transmitted. The cure for this noise is to force the tubing loops inward slightly and insulate the restrictor from the cabinet with loose insulation. When moving the tubing, do not push against any part of the restrictor itself, since it bends easily and then the plunger will stick.

However, in some cases the preceding steps are not enough since the restrictor may have a loud rattle in addition to its

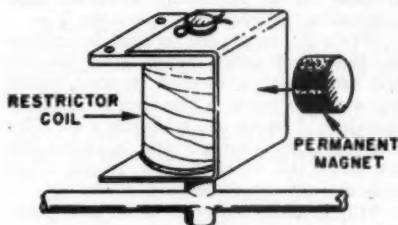


Fig. 9

normal sound. This rattle may be started by turning the power off and on or by tapping the top of the restrictor. This excessive rattle can be eliminated by fastening a small magnet, Part No. 161A1386, to the side of the restrictor, coil shield (See Fig. 9). The flat part of the magnet should be placed against the shield half way up. It can be fastened on by heating the magnet and then pressing it into the hydrolene on the shield. It is advisable that tape be wound completely around the magnet and coil assembly. Various positions of the magnet should be tried before fastening permanently. The application of the magnet will quiet the excessive rattle, but will not eliminate the residual sound. This remaining hum, however, is not usually objectionable with the insulation and rear cover in place, provided instructions in the preceding paragraph are followed.

After adding the magnet, it is a good idea to check the restrictor carefully to make sure that the plunger does not stick. The best way of doing this is to disconnect the unit from the junction box in the machine compartment of the cabinet, then turn both temperature

controls to maximum cold. Next, plug and unplug the refrigerator line cord from the power outlet several times. You should hear a click in the restrictor each time you plug it in and each time you disconnect it.

Avoid Bending Restrictor Tube

If pressure is applied against the restrictor of the Dual-Temp primary system, the plunger tube may be bent. Such bending causes the restrictor plunger to stick up, down or at an intermediate position. To eliminate this possibility, a change to a new type of tube which cannot be bent easily has been made.

However, extreme care must be taken with replacement units and with refrigerators having the original plunger tube. Do not exert any pressure against the restrictor coil or the restrictor tube within the coil. This precaution should be carefully observed whenever you remove or replace insulation or perform any other service operations in the back wall of the cabinet. You must also be very careful when replacing a sealed unit. If the restrictor is too close to the back wall of the cabinet, it may cause hum as described under Restrictor Noise, and may also be bent due to the pressure of the screwdriver when putting the cover plate back on.

Should you encounter a stuck restrictor plunger, examine the plunger tube for evidence of bending and try to correct the condition by straightening it before deciding to replace the primary system.

Adjustment of Bottom Shelf Model TD746 and TD946

When the vegetable pan or the drip tray of a Dual-Temp does not slide properly, adjust as follows:

1. Insert shelf frame in slides. If it is tight, loosen screws that hold drip rail to rear of compartment; then tighten screws that hold drip rail to sides. If it still does not slide freely, bend in sides of trough using light plastic or rawhide hammer. If frame binds on side screws, you can install No. 164A1371 screws which have thinner heads.

2. Put in glass and rear grill. If glass does not fit, examine glass for rough edges. These may be removed with a fine-cut file, wet with turpentine. If

necessary, bend flange of shelf frame out to permit glass to fit.

3. Remove shelf frame. Unscrew legs from drip tray slide rail. Bend slide rail downward until it slopes downward quite a bit. When the legs are replaced they should press firmly against the bottom of the food liner.

4. Replace the shelf frame.

5. Screw out the rear supporting leg of the drip tray slide rail until the upper edge of the slide rail clears the edge of

the shelf frame as it is moved in and out.

6. Insert vegetable pan and adjust front leg until top edge of vegetable pan front is parallel to and clears bottom edge of shelf frame.

7. Insert drip pan. The vertical adjacent edges of drip pan front and vegetable pan front should now be parallel. If not, make sure that vegetable pan front is mounted parallel with top of pan, then readjust the front leg.



A Close Customer

IT'S going to take quite a chunk out of our profit on the milk cooler if we have to run a new line from the house to the barn for Andy McPherson," Tom Clark of the Acme Electric and Refrigeration Company told Bill Winters, his partner in the business.

"That's right," Bill nodded, "but I guess we can't blame Andy too much. We agreed to install the cooler and guaranteed it to operate satisfactorily, which it doesn't and won't unless something is done about the wires from the house to the barn. It's nearly six hundred feet which is entirely too far to expect No. 10 wire to carry current for a $\frac{3}{4}$ -horse motor at 110 volts."

"Guess we should have thought of that at the time," Tom said. "Anybody but Andy McPherson would expect to pay for the new line, but not Andy. He's as tight as number six shoes on a size eight foot."

"Yes, and what gets my goat is the trick he pulled on us—having the Middleton Hardware Company try out one of their coolers first. That was when

he found out the line wouldn't carry the load. Then he comes to us and makes a deal for us to install a cooler and guarantee satisfactory operation!"

While the two were talking, the phone in the front office rang. Ann Mason, the office girl, answered it, then called back to the boys in the shop, "It's Mrs. Randall. I think she's having a fit. Her refrigerator is busted and spewing gas all over the kitchen; she wants some one to rush over and stop it."

"I'll go, Bill hollered back, and picked up his tool box.

The situation at Mrs. Randall's was bad enough, but it could have been worse.. The unmistakable odor of SO₂ hit Bill when he opened the back door and was much worse in the kitchen. He put on his gas mask and went to the refrigerator. A hissing sound inside the box told where the leak was. He located the place at once—a neat round hole that might have been made with a very small nail.



The unmistakable odor of SO₂ made Bill put on his gas mask.

Bill pulled a match from his pocket, whittled it to a point, and drove it in the hole. The hissing stopped at once. Then he opened the back door to allow the gas to escape.

When the room was fairly free of gas, he went back into the kitchen to figure on making permanent repairs.

He began by pumping the gas into the receiver until his gauge on the suction side showed just a little pressure. Then he examined the hole in the evaporator more closely.

"Can you fix it?" Mrs. Randall stuck her head in the door and asked anxiously.

"Yes, ma'm," Bill told her. "I may have to take the evaporator out to solder the hole. It's going to be a little difficult where it is."

"Well, I sure hope it isn't ruined and I hope you can get it fixed before my husband gets home this afternoon."

Looks Bad

"I'll do my best," Bill promised.

Bill lighted his portable acetylene torch and attempted to solder the hole. Gas trapped in oil in the evaporator built up pressure when he applied heat to the evaporator. Escaping gas blew the solder out of the hole. He soon saw that wouldn't work. He turned out the torch, picked up a wrench, and started to disconnect the lines to remove the evaporator. It was going to be quite a job, he could see that without half trying. The bolts holding the evaporator went through the top of the box. It would be necessary to remove the top of the box and the top insulation.

Then chances were the bolts were rusted so badly they would have to be cut off. He laid down the wrench and scratched his head. Evidently the dandruff digging had some effect because he lifted out the tray of the tool box and began looking through an assortment of small bolts and screws. He came up with a small self-tapping metal screw.

Before starting the screw in the hole, he tinned the screw head with solder, then tightened it in the hole. As he had hoped, the screw stopped the flow of gas. Using the torch, Bill flowed solder around the head of the screw, being careful to see that it tinned smoothly and free from pinholes.

The soldering job done, Bill opened the receiver valve and started the motor. He added a little gas to replace what had been lost by the leak, and the job was okay.

"That sure is fine," Mrs. Randall beamed. "And I'm sure glad you got it fixed before my husband got here. You see, he has cautioned me several times about using an ice pick to dig the frost off the coils."

"It's not a good idea," Bill commented as he gathered up his tools to leave.

It was time for lunch when Bill reached the shop. Tom had already washed his hands to go eat. They went to Tony's over in the next block.

A Voltage Problem

"Guess one or both of us should go out to Andy McPherson's and do something about his milk cooler when we get back," Tom said while they were eating.

"Guess we had better," Bill agreed. "Let's drive out there soon as we get back to the shop."

"The milk cooler is not working very well," Andy McPherson told them with a burr in his voice like a coffee grinder. "The motor gets very hot, then it stops."

"That's what we came to see about," Tom told him. "You need heavier wires to the barn. If we use heavier wires, that will mean new holes and insulators," Tom said, pointing at the sagging No. 10's hanging on split knobs fastened to 2 x 4's stuck in the ground.

"I don't know what is needed; all I know is the milk cooler is supposed to be installed so it will work properly. That's the agreement; when that is done, I'll give you a check." Andy sort of squinted one eye as though he were sighting a gun.

"Let's look around a little," Bill said.

Three-wire service, 110-220 volts, entered the house. Typical of R.E.A. lines, the neutral was a common ground and grounded at the house.

"What do you use 220 volts for?" Bill asked Andy.

"For the kitchen range," he replied.

"The No. 10 wires would probably carry current for the milk cooler motor if the voltage was 220," Tom said.

"That's right," Bill agreed, "but the trouble is we would still need 110 volts for lights in the barn. To get both volt-

ages would mean three wires. We could put insulators on top of those 2 x 4's and run a third wire for a neutral. That would cost several dollars, but it looks like about the cheapest way out."

"Be just our luck for the line to fall down if we started working on it," Tom said. "Have we got enough No. 10 wire and insulators in the pickup to run a third wire?"



Bill winked at his partner. "Might as well do this job now—there's enough No. 8 wire."

"No," Bill told him, "there isn't any No. 10 weatherproof wire in the pickup at all. There may be a hundred feet or so of No. 8."

"Well, I guess there's nothing to do but drive back to the shop and get some wire. Here goes our profit on this sale," he added morosely.

"Wait until I get a drink of water," Bill said. "All this pow-wow makes me thirsty."

"You'll find a cup hanging on a nail by the well house door." McPherson pointed to a small building about ten steps away.

Bill stayed so long at the well house that Tom began to think his partner had fallen in and went to investigate. He found Bill standing holding a tin cup in his hand staring at the hydrant.

"Sleep walking?" Tom asked.

"I have an idea," Bill replied. "Maybe we can come out of this job with a whole skin after all. Let's go over and talk to Andy."

"Good drinking water you have here," Bill commented as he and Tom walked

over to where Andy was standing. "I notice you have running water at the barn."

"That's right," said Andy. "Got it piped to the barn and chicken house both. Animals appreciate nice fresh drinking water just the same as people."

"What size pipe you have?" Bill inquired casually.

"One-inch galvanized going to the barn. Got a bargain in that pipe!" Andy said complacently. "Got it from one of my neighbors that bought it way before the war figuring to pipe water to his house from a spring. He needed some money and I bought it for less'n half what it sells for now."

"That's fine." Bill winked at his partner. "Guess we might as well do this job now there's enough No. 8 wire in the pickup."

It took the two men less than an hour, not more than fifty feet of No. 8 wire, wire, and a couple of ground clamps to do the job. The neutral wire was grounded to the pipe at the house, then another ground similarly put in at the barn. The grounded wire of the two going to the barn was disconnected and connected for 220 volts. At the barn all that was necessary after running the ground was to disconnect one of the wires to the lights, the one that was on the grounded side of the circuit and connect it to the new ground. That way they had 110 volts for lights and 220 volts for the motor. Then the motor connections were changed for 220 volts.

"We had better bring a new heater element for the motor overload," Bill said when the job was finished.

While the two were working, Andy stood around and watched but said nothing. When the switch was thrown, the motor started right off, and after running several minutes showed no signs of heating.

"Well, looks like you got it working." There was disappointment in Andy's tone. "Guess now I'll have to pay for a new line to the barn. Knew all the time it was needed. If you come to the house, I'll give you a check for the milk cooler."

Bill and Tom winked at each other and grinned. Besides saving money, they had done what few people in the vicinity had done before—come out even with Andy McPherson.

Electricity as applied to Refrigeration

Third Article — ALTERNATING CURRENT MOTORS

By Edward Dowis

THE electric power supplied by utilities, except in very restricted areas in some cities, is alternating current, commonly called A.C. This differs from D.C. (direct current) only in that it flows in one direction for a definite time, reverses and flows in the opposite direction for the same length of time and repeats this cycle with a definite frequency, expressed in cycles per second. The usual frequency is 60 cycle, which means that 60 times per second, the current builds up to a maximum, falls back to zero, builds up in the opposite direction and back again to zero. Thus the value and direction of the current and voltage are continually changing and 120 times per second the value falls back to zero. The close limits to which this frequency is held is demonstrated by the accuracy of electric clocks and timing devices which run in synchronism with the cycles.

The generation of alternating current is quite simple. Electromagnets mounted on the rotating part of the A.C. generator, called alternator, move past conductors which make up the stationary winding. The magnetic lines of force, as the magnets rotate, are cut by the conductors, causing voltage to be induced in the conductors as outlined in part 2 of this series. To better illustrate the terminology used with A.C. circuits, refer to Fig. 10 which represents a simple alternator consisting of a magnet mounted on a shaft and a single conductor lying within the field of this magnet. Let line AB represent the period of time required for the two pole magnet to make one revolution or 360 degrees. (this will be 1/60 second if the alternator is to produce 60 cycle current). At the position indicated, no voltage will be induced because the

lines are moving beside the conductor but not being cut by it. As the magnet moves through a 90 degree angle, however, the voltage reaches a maximum and recedes again to zero as the magnet completes 180 degrees of its revolution. As the south pole of the magnet approaches the conductor on the second half revolution the alternation will be repeated but in a reverse direction, completing 1 cycle or 360 electrical degrees.

A. C. Volts — Amperes

It will be seen that the voltage and current in A.C. circuits are continually changing but the values given are ef-

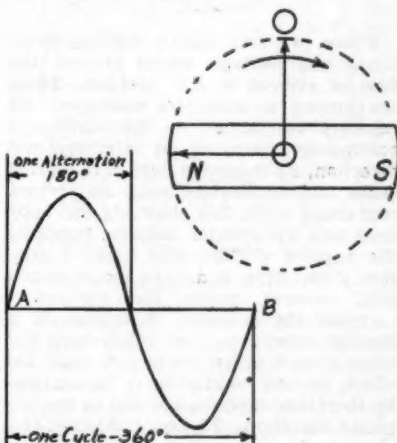


Fig. 10—Single phase alternator.

fective values, meaning that 110 volt A.C. will produce the same effective pressure as 110 volts D.C. The same is true of amperes. The maximum values,

however, exceed the effective values as read by meters by the ratio of 1.41. An alternating current with an effective voltage of 100 would have a maximum of 141. However, since it is effective values in which we are interested, maximum values are seldom considered except for their shock effect or strains on insulation at high voltages. Meters are always calibrated for effective voltage.

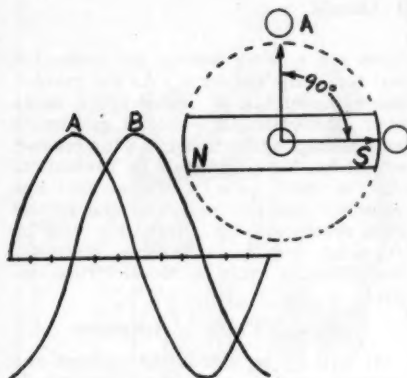


Fig. 11—Two phase alternator.

There are two factors besides resistance and voltage which control the flow of current in A.C. circuits. These are known as inductive reactance and capacity reactance. As the current is continually changing in intensity and direction, its magnetic field is doing the same and in devices such as motors, containing coils, this changing magnetic field sets up counter voltage, opposing the applied voltage, and limiting current flow. This is due to the magnetic field moving across the conductors carrying the current. It applies, to a limited extent to line conductors but when close together, as in a conduit, the effect of one conductor is neutralized by the other carrying current in the opposite direction. In non inductive circuits, such as incandescent lighting, its effect is negligible.

Capacity reactance is most noticeable in capacitor start motors but in all A.C. circuits there is a tendency for part of the continually changing current to be stored on the surface of conductors

separated by insulating material. This storage capacity or condensive effect opposes the building up of voltage in A.C. circuits. The combined effect of capacity reactance, inductive reactance and resistance is called impedance and is expressed in ohms and will always be volts \div amperes.

Single and Three Phase

Electric motors are classed usually as single or three phase. Two phase was used formerly to some extent but has practically been replaced by three phase. A two or three phase power supply simply consists of two or three alternating currents which are out of step because the windings which produce them are in different locations in the alternator. Fig. 11 illustrates a simple two phase alternator with two single conductor windings spaced 90° apart. The voltages induced in them will be indicated by the curves and will

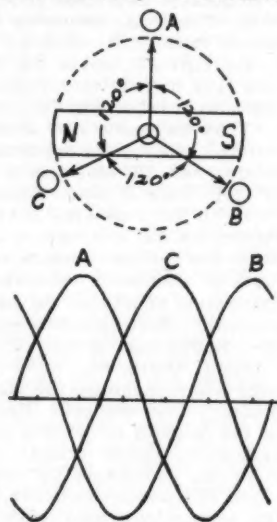


Fig. 12—Three phase alternator.

be 90° out of step or phase with each other. These phases can be used separately to operate single phase motors or combined to operate a two phase motor.

Fig. 12 illustrates the same alternator with three windings spaced 120° apart and curves representing the voltages developed in each conductor. It will be noted that while one phase is at zero value, changing direction, the other

phases are active and in opposite directions; also that the combined current or voltage above and below the line is equal at any given time so that three phase current can be transmitted very economically over three wires. Three phase motors develop a more steady flow of power than single phase because two of the phase windings are carrying current while the other is reversing. In single phase equipment, the current and voltage fall to zero 120 times per second, with 60 cycle equipment.

Single Phase Three Wire

A distinction should be noted here, between three phase and three wire single phase. Transmission economy is achieved by transmitting single phase

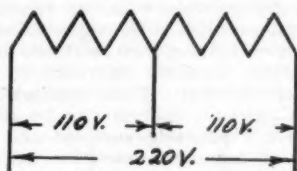


Fig. 13—Single phase 3 wire.

current over three wires with one neutral wire connected to the center of a single phase transformer or alternator winding and two outside wires connected to the opposite ends, as illustrated in Fig. 13. With this system, for 110-220 volt service, 110 volts will be obtained between the neutral and either outside wire, and 220 volts between outside wires. D.C. can also be transmitted by this system. A three phase service will give the same voltage between any two wires. This is a simple test to determine if a three wire service is single or three phase.

Types of Single Phase Motors

Single phase motors are usually listed under one of the following types:

1. Universal
2. Split phase, or split phase resistance start.
3. Capacitor, or split phase capacitor start.
4. Repulsion induction, or repulsion start induction run.
5. Shaded pole.

The universal motor is simply a D.C. motor with the entire magnetic system

constructed of laminated iron and field and armature connected in series. It is called universal because it will operate on either D.C. or A.C. Speed varies widely with load and is used with A.C. only in relatively small sizes. Portable electrically operated tools are usually equipped with universal motors.

The other types of motors differ chiefly in the method of starting. They are actually induction motors because the current in the rotor is not conducted through a connecting wire but induced by the pulsating or rotating magnetic field set up by the alternating current. Such motors are not self starting on single phase and require special means for starting.

Windings for single phase motors are very simple, consisting simply of one or more coils to build up a magnetic field with the required number of poles. Fig. 14 illustrates a winding for a 4 pole stator, as the stationary part of an A.C. motor is called. The winding for a shaded pole fan motor may consist only

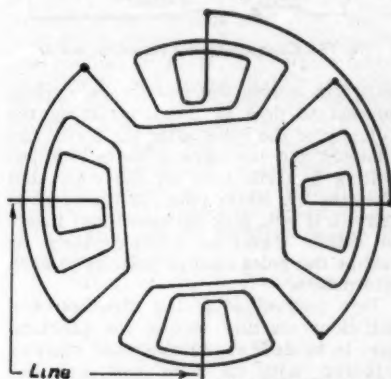


Fig. 14—Typical single phase winding.

of a number of turns of wire wound on a pole piece. There are no windings on the rotors of split phase, capacitor and shaded pole motors. These rotors consist of a drum with slots through which are driven or die cast, conductor bars in which current is induced by magnetic induction. This greatly simplifies construction and maintainance as commutator troubles account for a large part of the troubles on other type motors.

To illustrate the operation of single

phase motors, refer to Fig. 15 and assume that current is flowing as indicated by arrows, the magnetic field will be set up as shown. If this is A.C. the current in the winding will recede and reverse in direction. However, as this is taking place, the lines of force

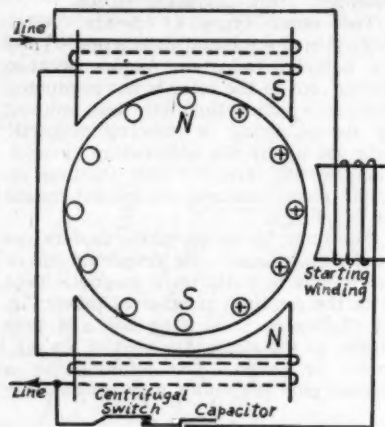


Fig. 15—Connections for capacitor motor.

must cut across the rotor bars causing current to flow in them, retaining the polarity of the rotor after the stator has changed and we have a north pole repelling a north pole on the rotor and likewise the south pole. If the rotor is started, it will pick up speed and rotate in either direction approximately as fast as the poles change polarity at each alternation.

One method of giving direction and sufficient starting torque for practical use, is to add an auxiliary or starting winding, with its poles half way between the main winding poles or 90 electrical degrees. It will be necessary that this winding have different inductive or capacity reactance so that it may carry current out of phase with the main winding. This winding usually has fewer turns and smaller wire so that its resistance is higher and inductance lower than the main winding. This permits current to build up more rapidly than in the running winding so its alternations will be slightly ahead. This gives a definite pull on the magnetized rotor, bringing it off dead center in a direction depending upon the connec-

tions between starting and running winding. Because the winding is necessary during the starting period only and the smaller wire would not be able to carry the current continuously, a switch operated by a centrifugal device on the rotor usually disconnects the starting winding as the motor comes up to speed. Motors in sealed compressor housings have the starting winding disconnected by a magnetic or hot wire relay outside the motor. This is the split phase, resistance start motor.

The capacitor start motor differs from the split phase resistance start only in that an electric condenser or capacitor is connected in series with the starting winding. This has the effect of displacing the alternations in the two windings so as to increase the torque over what is usually possible with the resistance split phase type. The capacitor consists, essentially, of two relatively large conducting surfaces separated by insulating material. When connected in an A.C. circuit, charges can be stored on these conducting surfaces and the effects of inductive reactance neutralized. By selecting the proper capacity, maximum torque can be obtained from any given motor. Connections for a simplified motor are illustrated in Fig. 15.

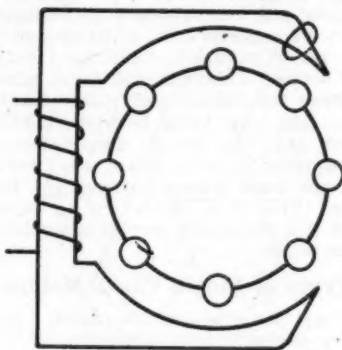


Fig. 16—Shaded pole motor.

The shaded pole motor does not have a starting winding but a loop of wire around part of the pole piece, as indicated in Fig. 16. Sufficient current is induced in this loop, which is out of phase with the line current sufficiently to start the motor. These motors have

very low starting torque and are usually used for fan motors and timing devices.

The one motor, other than the universal, which has a wound rotor is the repulsion induction. This motor has very good starting torque and less starting current than either capacitor or resistance split phase types. It is constructed and the stator wound as the other types, but an armature such as described in part 2 of this series is used in place of the squirrel cage rotor used in split phase types. (It is called squirrel cage because of the resemblance of the conductors and end rings to the old style squirrel cage.) In this motor, the stator winding is connected directly to the line. Current is induced in the armature winding but must follow a path determined by the setting of the brushes, which are merely short circuited and not connected to the external circuit. This motor is reversed by shifting the position of the brushes. In

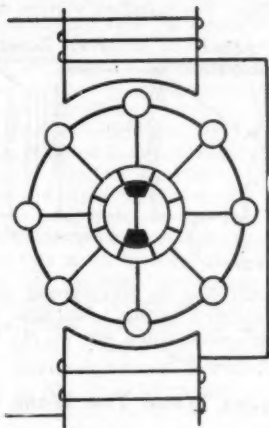


Fig. 17—Repulsion induction motor.

most makes, a mechanical lifting device, operated by centrifugal force lifts the brushes and short circuits the commutator bars, after which the motor operates as an induction motor. The internal connections are shown in Fig. 17.

Speed of A. C. Motors

It is apparent that the motive force for induction motors is the pulsating

magnetic field, which draws the rotor from one pole to the next with each alternation. Actually there is slip between the rotating field and rotor so the rotor does not quite keep up with the field changes. Since the frequency of the applied current determines how fast the field changes and since each alternation moves the field the distance

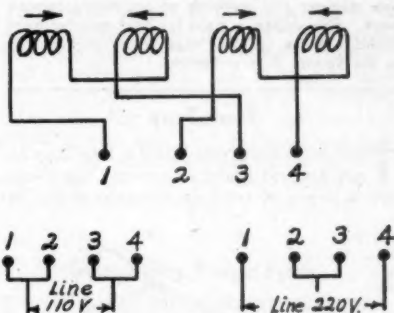


Fig. 18—Connections for two voltage winding.

from one pole to the next, the rpm of a motor is determined by the frequency and number of poles. A two pole motor at 60 cycles will move slightly less than 60 revolutions per second, or 3600 per minute, a 4 pole 1800 rpm., a 6 pole 1200, an 8 pole 900, etc. Actually the full load speeds will be somewhat less than the above so called synchronous speeds. The synchronous speed of any A.C. motor can be determined by the following formula:

$$\text{Rpm.} = \frac{120 \times \text{Frequency}}{\text{No. of Poles}}$$

Two Voltage Motors

Many motors are so constructed that they can be connected for either of two voltages, as 110 or 220. This is accomplished by bringing out wires from the winding so that the coils can be connected in groups, series and parallel. Fig. 18 shows a four pole winding with four leads brought out so that they can be connected for either 110 or 220 volts.

Simple tests for locating faults in motors and windings and wiring circuits for various relays, switches, thermal cutouts, etc. will be taken up in a separate article.

To Be Continued

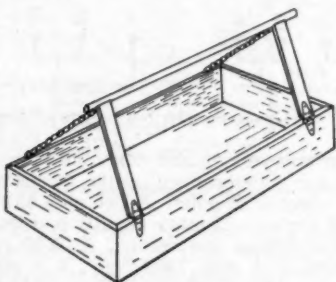
SERVICE POINTERS



A department for the exchange of ideas on new devices and methods of improving service work. Five dollars is paid for each pointer published. Write up your idea today and mail it to the Service Pointer Editor.

Tool Tray

THE next time you build a tool tray to use around home or around the shop, use a piece of rope or furnace chain as



one side of the handle hanger and fasten the other side with hinges. This permits the handle to drop down out of the way while you are working from the tray.

★ ★ ★

Clean Service Fittings

AIR, moisture and dirt are the Nemesis of our industry. Nine out of ten servicemen are directly responsible for units having such conditions in them. How many servicemen keep their loose fittings clean and free from oil, dirt, and the moisture the oil absorbs? Purging a small amount of refrigerant through gage manifolds and lines does not remove the moisture they pick up through months of use, and never removes all the air.

It is necessary to clean and dry fittings, hose lines and tools once a week with a solvent (not carbon tet. which only adds moisture due to its rapid evaporation and cooling action which in turn

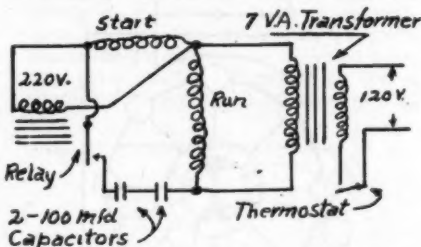
attracts moisture and leaves a carbon residue). On every job after servicing it is necessary to purge air and non-condensable gases from the unit to positively insure their maximum removal.

Failure to follow these procedures means poor workmanship and eventual breakdown due to accumulative overloads to units.—Submitted by Henry B. Boyce, San Leandro, Calif.

★ ★ ★

Converting From 50 Cycle

WE HAD a hermetic unit come into the shop which was designed for 220 volts 50 cycle. It had current operated relay. We installed voltage control



relay with step up transformer using a 7 volt-ampere rating. Machine works perfectly.—Submitted by J. M. Gantt, Montgomery, Ala.

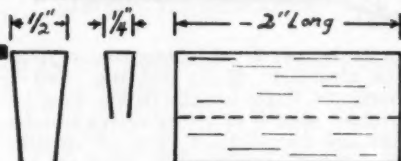
Smoke When You Want It

THE next time you come across that doubtful customer who wants to see smoke exhausted by an exhaust fan and won't let you use a smoke bomb or if there is no bomb available, try this one:

Run to the corner drug store and get about 25 cents worth of Ammonium Chloride or by its common name Sal Amoniac and put about a spoon full in the direct flame of your cigarette lighter or Prest-O-Lite torch and watch the smoke fume forward. No odor, no mess and perfectly safe. Cheap, too!—Submitted by E. F. Cassing, Boonville, Mo.

Thermo Bulb Clips

WHEN the clamp which holds the thermostat bulb on domestic evaporators is rusted or broken so that it cannot be used, I fasten the bulb with stainless steel clips I carry for the purpose.



These clips are made of scrap pieces of 22 or 24 gauge stainless steel as shown, in two sizes which seem to fit most needs. They are a simple but effective way of fastening bulbs.—Submitted by Owen Cowan, Urbana, Ohio.

★ ★ ★

Leaking Coldspot Check Valve

MOST units are wet or have sludge in them by the time they need service. The original Coldspot check valve seat and disk are iron and are subject to wear and corrosion. A replacement valve should be installed in every unit repaired. If the check valve leaks, hot gas and oil will enter the evaporator and defrosting is likely. Leaking of check valve is indicated by defrosting of the tail of the evaporator or the two center coils and a short "off" cycle.

When this work is done it is a good practice to resolder expansion valve where solder has powdered, and all suction line joints, particularly at the connection to the compressor. Clean compressor, screen and dome. Recharge with one pint of 300 viscosity or heavier compressor oil. Under no circumstances use any xylene or other paint thinner in unit.—Submitted by L. K. Willis, Long Beach, Calif.

★ ★ ★

Adjusting Hinges

A VERY practical yet comparatively simple way of a quick repair of those hard to adjust "old time" refrigerator door hinges and latches is this one:

Carry a spool of cheap solder and whenever a door hinge or door latch needs bringing out a bit, run a round of

solder. Tightening the latch screws brings the latch up tight yet no openings are visible and the job looks neat, too. This works especially good on old model Kelvinators and Frigidaires.—Submitted by E. F. Cassing, Boonville, Mo.

★ ★ ★

Tape To Hold Nuts

IT IS HARD to get at places where it is necessary to hold a small nut in place behind a panel, I have found it convenient to carry a small roll of Scotch tape in my service kit. I fold a small piece of tape with the adhesive to the outside. Sticking one side to my finger and the nut to the other side simplifies placing the nut in position.—Submitted by George Kogler, Chicago Heights, Ill.

★ ★ ★

Emergency Purge Hose

I WAS called out late one night on a deep freeze which came from the factory overcharged. I couldn't purge as the oven was in use and I didn't want Phosgene gas. Luck being against me, I didn't have enough tubing to reach a window so I had to think of something beside moving the box outdoors. I checked my car stock and there it was—about fifteen running feet of door gasket with hollow bead. I forced it over the adapter and purged the freezer. Since then it has served the purpose several times.—Submitted by D. Seibert, Astoria, N. Y.



"Why can't you bury your bones like any normal dog?"

QUESTIONS



ANSWERS

What Type Coil?

QUESTION 836: Would you like to ask a question for the satisfaction of both a customer and myself.

My customer has a walk-in cooler 6' by 5' by 8' high with 3" of cork for insulation. This cooler is loaded once weekly with 300 to 400 lbs. of meat, and is also used through the week for the regular deliveries of milk and dairy products as he does not have enough space for storage of these items in his display case. The present machinery in the cooling of this box is a $\frac{1}{2}$ hp. Universal condensing unit with a $\frac{1}{2}$ hp. F.C. coil. This combination is too large for his needs and as a result he is getting poor cooling effect as the machine either short cycles or if it is run the correct time there is too much temperature difference between cut-in and cut-out; the control being pressure.

He wants a new unit and coil of the correct capacity and type for the box, but having had so much trouble with the present coil which has too much circulation for his needs, he is very skeptical of almost any type coil suggested and wants to be sure that what he puts in will keep his meats the best possible.

I have suggested a wall mount of 3,000 Btu. per hour capacity believing that this will not produce too violent circulation but will provide the correct humidity as nearly as possible.

ANSWER: There is quite a little difference in opinion among both users of refrigeration equipment and engineers as to the best type of coil to use for meat storage. Some seem to favor the gravity type fin coil while others are favorable toward the forced convection type of coil. Apparently good results can be obtained from either type of coil providing they are properly engineered.

Authorities on the subject recommend the following conditions to be maintained in the cooler. A temperature of 32

to 34 degrees F. with close control over the movement of air and the relative humidity. Rapid air circulation must be avoided since it causes excessive shrinkage and discoloration. The air circulation should be held to the minimum required to maintain uniform distribution, correct temperature, desired relative humidity and to prevent condensation. The relative humidity would depend to some extent on the quantity of beef being stored, the length of time being held and the air circulation. Low humidity may result in the beef becoming sticky or moldy. For best results the relative humidity and air circulation must be considered together. For average conditions a humidity of approximately 86 to 90% with an air circulation which will provide 12 to 15 air changes per hour will give satisfactory results.

Your letter does not provide me with enough information to make any heat loss calculations since the biggest portion of the heat load here would apparently be in the 300 or 400 pounds of meat placed in the cooler once a week and the regular deliveries of dairy products which I assume are once a day. Since you have suggested a 3,000 Btu. per hour coil which is equivalent to a $\frac{1}{2}$ hp. motor, then I assume you have calculated the total load to be equivalent to the $\frac{1}{2}$ hp. capacity. Your recommendation of a F.C. coil then sounds like a good choice to me providing you select one with very low rate of air circulation.

It would seem that it would be desirable in this case to have a two-speed fan motor on the F.C. coil since the 300 to 400 pounds of meat placed in the cooler once a week would add quite a heavy load to the system for about 24 hours, particularly if this meat is warm when placed in the cooler. During this pull-down period it would be desirable to step up the capacity of the coil by increasing its cfm.

11th Annual R.S.E.S. Convention and R.E.M.A. Educational Show

Four full days of movies, discussions and exhibits, all educational, provides the attendance with volumes of diversified knowledge.

"FOUR intense days literally packed with education" is the only way to sum up the 11th annual R.S.E.S. convention held in conjunction with the 1st Mid-Western Refrigeration and Air Conditioning Educational Exhibit sponsored by R.E.M.A. at the Hotel Sherman, Chicago, November 19 to 22.

Eighty exhibitors of educational displays made up the Refrigeration Equipment Manufacturers Association educational exhibit which got off to a good start at noon Saturday, November 20, and remained open until 5:30 p.m. They were again open from 10:00 to 2:00 p.m. and 5:00 to 10:00 p.m. on Sunday and from noon to 4:00 p.m. Monday. During this time more than 1500 registered visitors kept exhibitors busy with the interest they showed in the displays.

Worthy of mention were the two visitors, C. R. Purley and L. I. Jull who flew from England to attend the show. According to these gentlemen, they had read of the meeting and show in THE REFRIGERATION SERVICE ENGINEER just two weeks previous to its opening. They immediately contacted their banker to make arrangements for the trip and hopped a plane for Chicago. Messrs. Purley and Jull are associated with the Longford Engineering Co. Ltd., Bognor Regis, England.

Educational Briefs

Twelve educational briefs, sponsored by REMA, were divided among the three days of Saturday, Sunday and Monday, and conducted during the same hours as the educational exhibits. These briefs consisted of illustrated lectures, films and product demonstrations and were attended by 80 to 150 men. The attendance varied from one brief to another because all of the visitors were not interested in all of the talks. They were so arranged that visitors could arrange their time to hear the briefs in which

they were interested, and then have ample time left over to see the exhibits.

RSES Annual Meeting

The remaining hours of each day were occupied with the RSES meetings, educational programs and social events. The attendance at these educational meetings

RSES 1949 International Officers and Directors

President: Chas. C. E. Harris, Cambridge, Mass.

1st Vice-President: A. L. Robertson, Madison, Wis.

2nd Vice-President: J. D. Nall, Miami, Fla.

Secretary: H. T. McDermott, Chicago, Ill.

Treasurer: M. R. Hanks, San Diego, Calif.

Sergeant-at-Arms: J. L. Driskell, Burley, Idaho.

Chairman Educational & Examining Board: John H. Spence, St. Louis, Mo.

Directors—Term Expires in 1949

O. C. Yates, Seattle, Wash.; C. W. Neisel, Corpus Christi, Tex.; Floyd H. Lilley, Chicago, Ill.; Cecil R. Visger, Kansas City, Mo.; and J. V. Berger, Denver, Colo.

Directors—Term Expires in 1950

Wm. Tierney, Worcester, Mass.; C. S. Tucker, Birmingham, Ala.; Bert Miller, Medina, N. Y.; Earl Yockey, Columbus, Ohio; and J. M. Lock, Toronto, Ont.

ranged between 300 and 500. They got off to a start Friday, November 19, at 1:00 p.m. when the convention was called to order by International Director and General Convention Chairman Floyd Lilley of Chicago. The first part of this afternoon session was devoted entirely to business. Mr. Lilley introduced the



C. HARRIS, Cambridge
President



A. L. ROBERTSON, Madison
1st Vice President



J. D. NALL, Miami
2nd Vice President

International Officers and the convention chairmen.

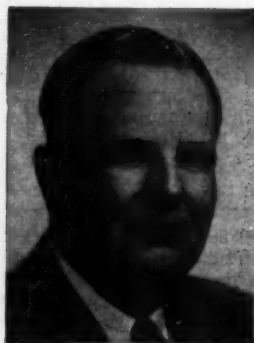
H. F. Hildreth, President of the Refrigeration Equipment Manufacturers Association, greeted the attendance and in his talk spoke of the wide variety of applications and the great opportunities presented by the refrigeration industry of today and the future.

J. P. Glass, Treasurer of the Refrigeration Equipment Wholesalers Association, delivered the greetings from that segment of the industry and in the wind-up of his talk presented the Society with a check for \$3,000 to be used in the furtherance of their educational work. It is thought at this time that this money will be used in the building of an educational library within the International Society.

E. S. Wright, the Immediate Past President of the National Association of Refrigeration Contractors, delivered greetings from his organization. Mr. Wright has long been a member of the RSES and was well known to the group.

Wm. J. Marshall, RSES International President, in his opening address paid high tribute to the hard work done by the convention committees, then spoke of the advances made by the National Society, particularly in the educational work during the past year. He also outlined in brief some of the work being done by International committees and their accomplishments during the year.

International Secretary H. T. McDermott in his report paid tribute to the accomplishments of the past year's officers



H. T. McDERMOTT, Chicago
Secretary



M. R. HANKS, San Diego
Treasurer



J. L. DRISKELL, Burley, Idaho
Sgt.-at-Arms

RSES International Directors



OLIN C. YATES
Seattle, Wash.



C. W. NEISEL
Corpus Christi, Tex.



F. H. LILLEY
Chicago, Ill.



C. R. VISGER
Kansas City, Mo.



J. V. BERGER
Denver, Colo.



EARL YOCKEY
Columbus, Ohio



W. TIERNEY
Worcester, Mass.



C. S. TUCKER
Birmingham, Ala.



BERT MILLER
Medina, N. Y.



J. M. LOCK
Toronto, Ont.



J. H. SPENCE, St. Louis
Chrm. Educ. Brd.

during such a short term of office which was somewhat less than the usual year. He also drew attention to the new membership certificate issued during the year; the establishment of a Safety Committee; the Society's participation in the revision of the B9 safety code; and the

addition of an educational office and employment of a full-time Educational Director. He also gave a breakdown of the Society membership, stating that as of the end of the fiscal year the Society consisted of 9,678 members and 163 chapters with 5 in formation.

Financial Report

M. R. Hanks, International Treasurer, read and analyzed the certified public accountants audited report of the books. The report read as follows:

"In accordance with your instructions, we have examined the books and records of the REFRIGERATION SERVICE ENGINEERS SOCIETY for the fiscal year ended June 30, 1948, and submit the following report and financial statements:

EXHIBITS

A—Balance Sheet

B—Comparative Statement of Revenue and Expenditures

REVENUE AND EXPENDITURES

Revenue of the Society for the year ended June 30, 1948, exceeded expenditures by \$1,430.53 compared with expenditures in excess of revenue for the previous year of \$4,753.98, or an increase in net revenue of \$6,184.51.

Details accounting for the above figures are shown in Exhibit B, which are summarized and compared with the corresponding figures for the preceding year as follows:

EXHIBIT A—BALANCE SHEET June 30, 1948—ASSETS

CURRENT:

Cash:

In bank	\$10,284.33	\$
On hand	120.00	10,404.33

Accounts receivable	85.51
Inventories—at cost	580.13
Prepaid subscriptions	202.76

Total current assets	\$11,272.73
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INVESTMENTS—U. S. GOVERNMENT BONDS—

at cost	2,000.00
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EQUIPMENT—at cost	754.83
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\$14,027.56

LIABILITIES

CURRENT:

Sundry Creditors	\$ 1,415.21	\$
Refunds due chapters and members	257.20	1,672.41

DEFERRED INCOME:

Per capita tax—chapters (for 1948-49 dues).....	\$ 2,484.94	
Dues—members-at-large (for 1948-49 dues)	3,394.43	\$ 5,879.37

\$ 7,551.78

RESERVE ACCOUNTS:

AVAILABLE FOR CURRENT OPERATIONS:

Balance—July 1, 1947	\$ 4,449.92
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Add:

Excess of revenue over expenditures for year ended June 30, 1948, per Exhibit B.....	\$1,430.53	
Less—amount expended for wire recording machine	159.50	\$ 1,271.03

\$ 5,720.95

INVESTED IN EQUIPMENT:	754.83	\$ 6,475.78
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\$14,027.56

**EXHIBIT B—COMPARATIVE STATEMENT OF REVENUE AND
EXPENDITURES—TWO YEARS ENDED JUNE 30, 1948**

	1948	1947	Increase Decrease*
REVENUE:			
Per capita tax—chapters.....	\$22,194.67	\$19,494.03	\$2,700.64
Dues—members-at-large	5,185.33	6,313.66	1,128.33*
Sales—less cost	141.39	520.29	378.90*
Interest on investments	50.00	50.00	
Discounts, etc.	7.42	246.56	239.14*
Educational films—(loss)	(165.30)	(953.15)	787.85
	<u>\$27,413.51</u>	<u>\$25,671.39</u>	<u>\$1,742.12</u>
EXPENDITURES:			
GENERAL AND ADMINISTRATIVE:			
Clerical	\$ 7,266.36	\$ 7,076.06	\$ 190.30
Stationery and printing	571.86	792.83	220.97*
Postage	1,030.71	687.14	343.57
Traveling—Board of Directors	1,264.71	850.45	414.26
Professional Auditing, Bonding Fee	295.00	172.50	122.50
Exchange	16.14	11.16	4.98
Telephone and telegraph	103.71	236.39	132.68*
Office supplies	322.37		322.37
Miscellaneous	209.38	371.86	162.48*
	<u>\$11,080.24</u>	<u>\$10,198.39</u>	<u>\$ 881.85</u>
PROMOTIONAL:			
Membership forms	\$ 895.11	\$ 898.26	\$ 3.15*
Traveling—Board of Directors to start new chapters	1,081.11	1,328.75	247.64*
Chapter promotion	151.43	118.52	32.91
Postage	6.00		6.00
Telephone and telegraph		9.94	9.94*
Miscellaneous	9.62	228.81	219.19*
	<u>\$ 2,143.27</u>	<u>\$ 2,584.28</u>	<u>\$ 441.01*</u>
EDUCATIONAL:			
Subscriptions for each member of official organ	\$ 9,272.83	\$ 8,188.41	\$1,084.42
Lectures	150.50	1,805.20	1,654.70*
Postage	462.69	1,242.20	779.51*
Special educational bulletins	846.00	3,379.61	2,533.61*
Stationery and printing		352.72	352.72*
Annual convention	1,413.58	2,202.11	788.53*
Traveling	4.43	277.35	272.92*
Membership forms	126.05		126.05
Recordings	178.43		178.43
Safety council	42.42		42.42
Miscellaneous	262.54	195.10	67.44
	<u>\$12,759.47</u>	<u>\$17,642.70</u>	<u>\$4,886.23*</u>
Total expenditures	<u>\$25,982.98</u>	<u>\$30,425.37</u>	<u>\$4,442.39*</u>
REVENUE IN EXCESS OF OR (LESS) THAN EXPENDITURES			
	<u>\$ 1,430.53</u>	<u>\$(4,753.98)</u>	<u>\$6,184.51</u>



Here is a portion of the crowd that attended the RSES educational meetings in Chicago, Nov. 19-22. When this photo was taken, the demonstration of two way radio communication for trucks and cars was being given.

Committee Reports

Among the reports of International committees, one by Willis Stafford, Chairman of the Publicity Committee, announced the availability of a new membership booklet completed just prior to the convention.

Charlie Harris, who is the RSES representative on the Regional Conference Committee, stated that he had a number of complaints from chapters about the agreement between RSES and REMA in which in return for REMA's support of the regional shows the Society would refrain from asking REMA members for any other support. According to Mr. Harris, some of the chapters and state organizations dislike the attitude of REMA in asking that no support be requested of its members. Mr. Harris went on, however, to emphasize that REMA will have spent more than \$20,000 for the four regional shows and that they have certainly contributed more than their share in this manner. He felt that chapters were in no way handicapped by the agreement because REMA consists of only 118 members which leaves hundreds of other prospects for help in educational projects.

George Schuld, reporting for the safety committee, announced the sale in the near future of certain safety materials

such as decalcomanias, safety bulletin boards and other materials useful in the promotion of safety in the field. He also announced a safety contest conducted during the convention in which a number of cartoons were displayed and contestants were invited to find the greatest number of safety errors contained in the cartoons. The contest was sponsored by the Buckeye Association. Winners were to be announced at the end of the convention and prizes of \$25, \$15 and \$10



Jack Glass, right, Treasurer of R.E.W.A., hands William Marshall, then International President, a \$3,000 check and a handshake. The money is a contribution from the Refrigeration Equipment Wholesalers Association to the educational fund of R.S.E.S.

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The crowd attending the 11th annual convention banquet at the Hotel Sherman, Chicago, was so large that two views had to be taken from opposite ends of the banquet room to show them.

were offered for the first, second and third prizes.

Paul Reed, Educational Director for the Society, reported on what had been accomplished to date toward the program outlined two years ago in Cleveland. He enumerated the various educational

helps available through the Society now, and announced the building of an International library which will include books, films, sets of slides and talks on platters and various other information of all types.

The wind-up of this business session



held Friday afternoon included the appointment by the International President of the following committees:

Nominating: John Madden, Chairman, Boston Chapter; Charles Edwards, Arrowhead Chapter; Thomas Carnell, Atlanta Chapter; J. Mendell, Rochester Chapter; and R. Hollingsworth, Cleveland Chapter.

Resolutions: Wm. J. McCarley, Chairman, Tri-County Chapter; Wallace Lindermann, Corpus Christi Chapter; and J. Lawrence Hall, Granite State Chapter.

Auditing: Forrest Poole, Chairman, Southern Ohio Chapter; James D. Nall, Miami Chapter; and Claude Wall, Akron Chapter.

Credentials: Fred Asselmeyer, New York Chapter; Ed Ridsall, Ontario Maple Leaf Chapter; and Don Taft, Scioto Chapter.

RSES Educational Program

Earl Jennings, Service Manager of Temprite Products Corp., was the only speaker of the Friday afternoon program. He was introduced by Paul Reed who conducted the educational program throughout the four days. Illustrating his talk with projected slides, Mr. Jennings covered the subject of servicing and calculating the size of water coolers required in various applications.

Saturday Morning

Saturday morning the educational program started off with an Information Please session at 9:00 a.m. Paul Reed presided, with a Board of Experts including Earl Jennings, John Spence, Frank Y. Carter, Dr. Walter O. Walker and Ed. Kellie. This question and answer period continued at a lively pace for approximately an hour.

The first speaker of the morning was Wm. Ural, Engineer, Victor Products Corp., on the subject "Servicing Milk Coolers." It was a very informative paper bringing out many pointers and peculiarities dealing with the problem of servicing this equipment. He described the various types of coolers used

Ansul Chemical Co. display, top, was a popular spot in the show, but judging from the crowds in the booths of Remco, Inc., Penn Electric Switch Co., and Detroit Lubricator Co., all shown on this page, they were all popular.

and explained the construction and operation of the Victor cooler in particular. He touched on the practice of farmers of using their milk coolers for the storage of such items as watermelons, butter, eggs and other foods by placing them in a milk can and immersing in the cooler. Because of the danger of damaging the liners of these coolers, he suggested frequent painting of the interior as a protection against the bumping of cans which tend to mar the finish.

A very interesting demonstration of a two-way radio communication for service trucks was given by Gene Goebel, Sales Manager, Communications Division of Motorola Corp. A self contained central station was set up in the meeting room, together with two mobile units which ranged around the room and conversations were carried on between the two demonstrating the method of relaying messages from a mobile unit to the central station and from the central station to another mobile unit or to any other point desired. This is a relay type of message service which does not permit direct contact between two mobile units but instead provides a relay message service through the central station.

The Annual Banquet

The annual banquet held Saturday evening exceeded all previous expectations of attendance. An estimated attendance of 350 swelled to more than 740 before the banquet got under way. The large Grand Ballroom of the hotel was therefore packed to capacity. The attendance was entertained just before dinner by the Hotel Sherman's chef, an Irish tenor, who sang three songs. After dinner the Tri-County Chapter players put on a skit entitled "How Not to Conduct a Meeting."

Square dancing and ballroom dancing occupied much of the crowd during the evening which was broken occasionally with mock trials of some of those in attendance. One of the defendants, H. F. Spoehrer, was late for dinner and was thus arrested. His barbershop quartet sang several old songs before charges

Exhibitors shown top to bottom on this page are: Westinghouse Electric Corp., Kerotest Manufacturing Co., Spencer Thermostat Co., and Ultra Violet Products, Inc.

Photos by Irving Alter





against him were dismissed. The hit of the evening was John & Ed's Last Chance Saloon which adjoined the ballroom and provided plenty of phoney money with which the guests could indulge in their love of gambling. John and Ed were early '49 characters ably represented by E. Riccio, past president of Chicago chapter and John Heger, current president.

C. W. NEISEL finally convinced certain members of the Society that Texas can really grow big lemons. It seems that Mr. Neisel had endeavored to convince these members of the size of Texas lemons at the last annual convention in Cleveland, but he met with little success and therefore determined to demonstrate at this meeting. He brought with him a dozen lemons the size of a grapefruit. Unless anyone think they were grapefruit, he dared Wm. J. Marshall to drink the juice of one without facial distortion. The lemon was cut, the juice extracted, and Mr. Marshall drank it—but even though he did so without outward indications of how sour the juice was, we think there was little doubt left in the minds of the onlookers that it was really lemons Mr. Neisel displayed.

Sunday Afternoon

Sunday afternoon the educational program was again continued with the first speaker on the program being N. C. Cooper, Electrochemicals Dept., E. I. duPont de Nemours & Co., who spoke on the subject "Refrigerant Cylinders." Mr. Cooper gave a complete account of I.C.C. regulations, then went into a discussion of the behavior of refrigerants under varying temperatures as compared to water. He discussed safety relief devices, then demonstrated methods of determining cylinder capacities for various refrigerants by first determining their displacement of water.

Pictures on this page show the crowds that visited the exhibition. However, visible are the exhibits of Servel, Inc., second from top, Ranco, Inc., and at bottom the plastic refrigerator in the Nash Kelvinator booth.

R. H. Israel of the Virginia Smelting Company was then called upon to give a demonstration of the five year hydrostatic test on the cylinder. With apparatus set up on the speakers' table, Mr. Israel showed the method used in performing this test. Using the same equipment, Mr. Israel and Mr. Moore then demonstrated the rupture type of safety device and the spring loaded relief valve.

Draft beer, how it is manufactured and how it should be preserved, came in for a thorough discussion by Joseph Leinen, Service Manager of Jos. Schlitz Brewing Company. His talk provided a better understanding of a product which uses a large amount of refrigeration.

The subject "Inherent Motor Protection" proved an exceptionally interesting one because it touched on the problem of hermetic units—a subject of intense interest to many service companies today. B. O. Haun, Engineer, of Spencer Thermostat Co. delivered the paper, describing thoroughly the various types of starting relays on hermetics, beginning with the old method of using centrifugal switches on open motors, then describing the current relay, the hot wire relay, the voltage type and winding up his talk with motor protection methods with particular reference to the Spencer protector.

C. E. Ploeger, Chief Engineer, Electric Div., Servel, Inc., spoke on the subject "Design of Motor Speed Compressors", analyzing the construction of various Servel units.

Monday Morning

The morning program on Monday was again opened with an Information Please session with Paul Reed presiding and with the Board of Experts consisting of John Spence, Earl Jennings, Dr. W. O. Walker, Ed Kellie, Frank Carter and George Clark.

The first speaker of the morning was George Schulz, Sr., Chairman of the In-

Photos on this page show from top to bottom: Copeland Refrigeration Corp. exhibit; the booth mostly obscured by people in Imperial Brass Co. exhibit; Dole Refrigerating Co. exhibit, and at the bottom the testing and demonstration of refrigerant relief valves during the educational meetings.

Photos by Irving Alter



ternational Safety Committee, on the subject "Hazards in Refrigeration Service." Mr. Schuld, as usual, provided the audience with many laughs, together with many useful safety pointers. At the end of Mr. Schuld's talk he announced the winners of the safety con-



One of the first acts of newly elected International President Charles C. E. Harris was to present J. J. Madden, left, President of the New England States Association, with their charter. Mr. Madden then presented Charlie with a gavel from the New England States Assn.

Photos by Irving Alter

test who were: first prize—K. J. Swaski, Missouri Valley Chapter, winner of the \$25.00; second prize—Wm. Kovacek, Medina Chapter, winner of the \$15.00; third prize—J. Lawrence Hall, Granite State Chapter, winner of the \$10.00.

The balance of the Monday morning session was devoted to business, during the first-part of which committees gave their reports. The auditing committee reported that everything had been found in order; then the Constitution and By-Laws committee, headed by C. R. Visger, read the proposed changes to the Constitution and By-Laws. He was aided by C. W. Neisel.

Because of a few requests received from trade schools to form chapters consisting wholly of junior members which the majority of members oppose, proposed amendment to the Constitution adopted at this meeting specified that "This association shall have power to grant charters to chapters, state and sectional associations. Charters to chapters may be granted upon petition of ten or

more eligible members in good standing who shall qualify either as active or associate members, fifty percent of whom shall be either active or certificate members. Charters to state associations shall be granted upon petition of two or more chapters within any state, each chapter having ten or more members in good standing. Charters to sectional associations may be granted upon petition of two or more state or provincial associations or the majority of chapters thereof."

The second recommendation involving the voting privileges of members and the use of proxies upon recommendation of the Board of Directors was defeated. However, the Constitution and By-Laws committee offered the following resolution to replace it which is now under consideration: "WHEREAS, the equality of members is a fundamental principle of deliberative assemblies; and WHEREAS, some of the smaller chapters feel they are deprived of their voting privileges because of their financial inability to send delegates to the conventions, and WHEREAS, the unlimited use of proxy voting may defeat this fundamental principle, therefore, be it resolved that Article V, Section 1 of the By-Laws be amended to read: At the annual and special meetings of the International Society, each chapter shall be allowed one



C. R. Purley, right, who flew over from England for the show, is apparently comparing notes with H. F. Hildreth, President of R.E.M.A.

voting delegate who is a member of the chapter and one vote for every member in good standing and upon whom the International per capita tax has been paid. In the event of the inability of such voting delegate or his alternates to

First Southern Refrigeration and Air Conditioning Educational Conference and Exhibit

Sponsored By

Alabama Association
Refrigeration Service Engineers Society

And

Refrigeration Equipment Manufacturers Assn.

Municipal Auditorium — Birmingham, Ala.

Headquarters — Tutwiler Hotel

FEBRUARY 4, 5, and 6, 1949

PATTERNED after the three successful previous regional conferences held in San Francisco, Boston and Chicago, the concluding one in this series will be held in Birmingham, Alabama, February 4, 5 and 6, to give the refrigeration industry in the Southern region its opportunity to see an outstanding educational exhibit arranged by leading equipment manufacturers.

The entire Birmingham Municipal Auditorium will be used for the exhibits and educational meetings arranged by the Refrigeration Service Engineers Society.

Do not confuse this exhibit with the usual "trade exhibit." It is much more. Every exhibit is a cut-away or working model display arranged by the manufacturer to show how the product is manufactured; how it can be best installed and serviced. Exhibits are manned by engineering and service personnel to answer and consult with you on your individual problems. It is not a sales exhibit.

The Alabama Association will sponsor an outstanding educational program, during the "off hours" of the exhibit. Running concurrently with the exhibits will be educational briefs of movies, demonstrations and talks. It provides a busy three-day program for the service engineer, contractor, dealer and other industry members.

While all registration, educational activities and exhibits will be held in the Auditorium, the official hotel will be the Hotel Tutwiler, conveniently located to the Auditorium.

All members of the industry are invited whether or not they are members of participating associations.

attend the above meetings, said delegate shall be empowered to delegate his authority by proxy to any member of the Society in good standing and upon whom the International per capita tax has been paid. In no event, however, shall any member hold proxies for more than three duly elected chapter voting delegates nor shall any member hold by proxy, votes for more than one hundred fifty members. Such proxies shall be on forms furnished by the International Secretary and shall be in the hands of the International Secretary at least ten (10) days prior to any general or special election of officers or directors. Certificate, Active or Associate Members-at-large are entitled to one vote each. No Member-at-large shall be permitted to vote by proxy unless he shall give prior

notice, accompanied with an affidavit showing his inability to attend, which notice shall be filed with the International Secretary on or before ten (10) days prior to any general or special election of officers or directors."

Wm. J. McCarley presented the resolutions committee report and the credentials committee reported everything in order. The annual election of officers was then held and immediately afterward the gavel was presented to Charles C. H. Harris, the newly elected International President. One of the first acts of Mr. Harris was to present John J. Madden, President of the New England States Association with their charter. In turn Mr. Madden presented Charlie with a gavel made by one of the New England State members from refrigeration parts.

The Ladies Auxiliary Enjoys Full Program of Entertainment



Mrs. J. D. Mendell
President



Mrs. C. R. Visger
Secretary

IN conjunction with the 11th annual R.S.E.S. Convention, the Ladies Auxiliary held its 7th annual convention. The entertainment was provided for by the Illinois ladies with Mrs. Floyd Lilley, wife of the Director for the State of Illinois, as General Chairman. She was assisted by the following ladies from Chicago: Mesdames M. Brunderman, H. T. McDermott, Al Dellheim, Eugene Monti, Ray Frame, John Heger, George T. Howe, George Wilson, and by Mrs. Willis Stafford of Warrenville, Ill., Mrs.

International Auxiliary 1948-49 Officers

President: Mrs. John D. Mendell,
Rochester, N. Y.

1st Vice-President: Mrs. Einer
Hansen, Flint, Mich.

2nd Vice-President: Mrs. John
Sackey, Galesburg, Ill.

Secretary: Mrs. Cecil R. Visger,
Kansas City, Mo.

Treasurer: Mrs. A. C. Taylor,
Kansas City, Mo.

Sergeant-at-Arms: Mrs. Walter
Bobzien, Newfane, N. Y.

Directors

Mrs. J. L. Driskell, Burley, Idaho,
Chairman of the Board; Mrs. Wm.
Bevis, London, Ont., Canada; Mrs.
G. W. Benigar, Tulsa, Okla.; Mrs.
George Gartner, Minneapolis, Minn.;
Mrs. V. E. Denny, Pasadena, Cal.;
Mrs. Geo. Klahn, St. Paul, Minn.;
and Mrs. R. B. Robertson, Rockford,
Ill.

Wm. McCarley of Joliet, and Mrs. Paul Reed of Milwaukee.

With a total membership that now passes the 400 mark, registrations were the heaviest to date. Many of the ladies arrived on Thursday, the day before the opening of the convention, and spent their time renewing acquaintances and making plans for spare moments. The committees of the Auxiliary met with Mrs. Lilley to map last minute changes.

The entertainment under the guidance of Mrs. Lilley and her committee got off to a lively start at 10:30 a.m. Friday morning when a large percentage of the visitors attended Tommy Bartlett's radio show, Welcome Travelers, at the College Inn. Mrs. John Heger was hostess to this group.

During Friday afternoon there was a business meeting of the Auxiliary at which non-members were welcome. Mrs. John D. Mendell of Rochester, N. Y., Chairman of the Welcome Committee, introduced Mrs. J. L. Driskell of Burley, Idaho, President of the Auxiliary, who in turn introduced her officers. Delegates of the chapters told of their year's activities and two door prizes were won by Mrs. Emil Flanik and Mrs. George Baumgardner, both of Cleveland, Ohio.

Saturday morning the ladies were

given the choice of cards and bunco in the Grey Room of the hotel or going on a shopping tour in the Chicago Loop. During the afternoon, hostess Mrs. M. Brunderman escorted 45 ladies to see "High Button Shoes" at the Great Northern Theatre. Saturday evening was reserved for the annual R.S.E.S. banquet and entertainment which proved to be a full evening of fun for both men and ladies.


On Sunday morning, from 60 to 70 ladies and men took advantage of the sight seeing tour arranged by the entertainment committee. The tour was made in a Gray Line sight-seeing plastic dome bus, taking in the North Shore along Lake Michigan, Chicago Beach Hotel, the Elks Club, Chinatown, the Medical Center, and other points of interest. Mrs. H. T. McDermott and Mrs. Paul Reed were hostesses on the trip. The tour proved so interesting that another was planned for Sunday night, during which the group visited Chinatown and some of their better known night spots.

Sunday afternoon the ladies were entertained with a Crazy Hat Contest. There were 16 contestants with the winning hat being dreamed up at almost the last minute by Mr. Sol Millman and Mr. J. N. Hughes of St. Louis, and worn by



Two of the ladies entertainments shown here were the crazy hat contest and the relay race. Winner of the hat contest, Mrs. J. J. Pedrotti, is shown in the inset.

Photos by Irving Alter



Improve Refrigeration Efficiency
with **ffp** **DEPENDABLE**
Refrigeration Valves

Enjoy New

*trouble-free
water control*

on your water-cooled compressors

"wipes itself clean" at every cycle . . .

Here's a new idea in accurate, positive, economical, water-flow control for your water-cooled condensing units...a self-cleaning valve that just can't be stopped by dirtiest water. Dirt, lime, scale and other impurities are simply wiped off the stainless steel orifice every time the sliding plastic seat moves. Avoids all common troubles due to dirt and impurities in cooling water.

But this self-cleaning advantage is only *one* important feature of the new A-P Model 65 Water Regulating Valve! It's more compact—only $4\frac{1}{16}" \times 2\frac{1}{2}" \times 1\frac{1}{4}"$ —for easier installation in less space. It's simple to adjust to the system by means of the adjusting stem at the bottom. The Model 65 operating principle is extremely effective and depend-

able. When head or receiver pressure exerted on the heavy, two-ply brass bellows is greater than the preset force of the adjustable steel spring in the lower section, the compression valve slide moves down across the stainless steel orifice to release the water flow. As pressure drops, valve moves to the closed position. Special hydraulic O-ring seals prevent water leaking into spring and bellows domes, and all parts contacting water are corrosion-proof for long-life service.

Use the new A-P Model 65 on all water-cooled compressors up to 6 H. P. size . . . for trouble-free water regulation and customer satisfaction. Stocked now at all good Refrigeration Equipment Wholesalers. See the Model 65 at your Wholesaler or write for bulletins.



DEPENDABLE

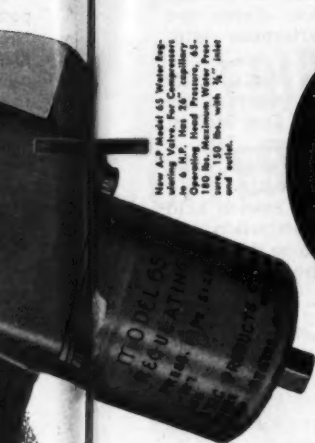
STOCKED AND SOLD BY GOOD REFRIGERATION WHOLESALERS EVERYWHERE

RECOMMENDED AND INSTALLED BY LEADING REFRIGERATION SERVICE ENGINEERS.

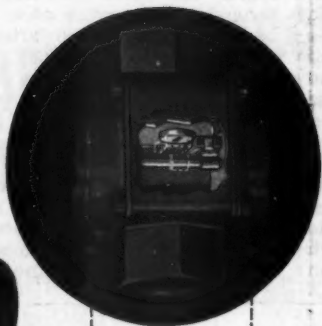
REGULATION VALVES

AUTOMATIC PRODUCTS COMPANY

3484 North Thirty-Second Street • Milwaukee 10, Wisconsin
Export Dept., 13 E. 40th Street, New York 16, N. Y.



New A-P Model 65 Water Regulating Valve for Condensing Units. Operates at 150 lbs. with 1/2" inlet and outlet.



Cross section shows "wiping" action of sliding plastic seat wiping orifice clean at each cycle.

Mrs. J. J. Pedrotti of Richmond Heights, St. Louis County, Mo. This prize winning hat represented the convention, containing something from each exhibit.

Following the hat contest, the ladies had a relay race consisting of two teams of ten each. Each team was provided with a suitcase containing a man's large nightgown, a stocking cap and a candle. Contestants were required to pick up the filled suitcase, run to the end of the room, get ready for bed, run back to the starting point, take off the night clothes, put them in the suitcase and hand it to the next contestant who went through the same procedure. The race was won

by the team headed by Mrs. Einer Hansen of Flint, Mich., with little time to spare. Onlookers were kept in stitches throughout the entire race. Cards and bunco completed the afternoon with many prizes being awarded.

Early Monday morning, Mrs. George Wilson, hostess, conducted many of the members and guests to the Don McNeill Breakfast Club radio program. Mrs. J. L. Driskell, Auxiliary President, and Mrs. John Heger were on the air.

During the final business session held Monday morning, the Constitution and By-Laws were brought up to date, then the annual election of officers was held.

RSES Member Is Rotary Officer

LIONEL V. MACDUFF, owner of the North Shore Electric Equipment Company, dealers in refrigeration and



air conditioning equipment in Lynn, Mass., is serving as an officer of Rotary International, world-wide service organization, for the fiscal year 1948-49. As Governor of District 196, he is coordinating the activities of 31 Rotary Clubs in a portion

of Massachusetts. During his term of office, he will visit each of these Rotary Clubs to offer advice and assistance on Rotary service activities and administration. Mr. MacDuff is a member of the American Society of Refrigerating Engineers and the Refrigeration Service Engineers Society. Prior to entering the air conditioning and refrigeration field, he sang professionally on the concert stage. A member of the Rotary Club of Lynn since 1933, he is a Past President of that Club.

Rotary membership figures are today at an all-time high, with some 6,600 Rotary Clubs in 80 countries having a membership of 320,000 business and professional executives. Exercising direct supervision over these Rotary Clubs in North, South and Central America, Eu-

rope, Asia, Africa, and the islands of the Pacific are 180 District Governors who were elected at Rotary's 1948 Convention in Rio de Janeiro, Brazil.

The activities of Rotary Clubs throughout the world are designed to help men enlarge their friendships, improve their communities, promote high standards in their businesses and professions, and to advance international understanding, good will and peace.

★ ★ ★

NERA Becomes National Appliance and Radio Dealers Association

THE Board of Directors of the National Electrical Retailers Assn., meeting at the Sheraton Hotel in Chicago Nov. 14 authorized a change in the name of the organization, Clif Simpson, managing director announced recently. Henceforth the association will be known as the National Appliance and Radio Dealers Association.

In indicating the name change, Simpson said, "For some time leaders within the association have been of the opinion our association needed a name that would more clearly be indicative and descriptive of the business firms we represent. Oftentimes in the past it has required considerable explanation to make clear what we meant by 'electrical retailer'. It is thought that the new name—the National Appliance and Radio Dealers Association will be clearly understood to mean that we represent appliance and radio dealers."

FRIGIDAIRE ACCESSORIES OFFER PLUS-PROFIT OPPORTUNITY

SIMPLE SELLING PLAN AND WIDE VARIETY
OF PRODUCTS BRING EXTRA BUSINESS



Quickube Trays



Range Accessories

To increase business fast, follow this simple selling plan:

On every service call you make, take along an assortment of Frigidaire refrigerator and range accessories. Note which items the customer needs, then demonstrate or tell about them when the job is done. Chances are that most demonstrations will mean one or more sales!

This easy method is bringing extra business to more and more smart servicemen. Why not try it yourself?

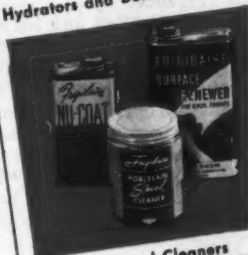
FREE FRIGIDAIRE PARTS CATALOG

Write to Frigidaire Division, General Motors Corp., 1327 Amelia St., Dayton 1, Ohio.

Mail this coupon today



Hydrators and Defrosting Trays



Polishes and Cleaners



You're twice as sure
with two great names

FRIGIDAIRE made only by
GENERAL MOTORS

FRIGIDAIRE DIVISION
General Motors Corp.,
1327 Amelia St., Dayton 1, O.

Please send my free copy of your new parts catalog
—"Genuine Precision-Built Frigidaire Parts and
Accessories."

Name _____

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Address _____

City _____

State _____

NARC 3rd Annual Meeting

Features Forum Discussions

Controversial subjects are adroitly handled in an open forum followed by panel discussions.

THE 3rd annual meeting of the National Association of Refrigeration Contractors, held in the Hotel Sherman, Chicago, November 18 and 19, surpassed all others from the standpoint of attendance, kind of program offered, and from the interest created among attendance. About 150 were present at each of the three meetings held during the two-day session, and a great deal of interest was shown in the five forum type discussions arranged for the crowd.

A luncheon held Thursday noon, the first day of the meeting, featured Joseph T. Meek, who is a well known speaker much in demand in these parts, on the subject "Boom or Bust in 1949." He did not commit himself to which it will be but did leave an inspiring thought with his audience.

Albert F. Weil and his committee, all from the Chicago area, did an outstanding job of arranging the program of discussions. The method of presenting such controversial questions as guarantees and contractor licensing in forum discussions, then thrown open to panel discussions, was probably the only manner in which they could be handled.

The first meeting was called to order at 9:30 a.m. on Thursday, November 18. H. E. Wheeler, President of the Chicago group, gave a few welcoming remarks then introduced E. S. Wright of Youngstown, Ohio, National President of the Association. Mr. Wright, after a few remarks, introduced Albert G. Weil, Program Chairman, who in turn introduced his committees and gave a brief resume of the program to come. Each discussion as it came up was handled by a moderator, who introduced speakers on the subject.

The first subject "Equipment Sales and Merchandising Methods" was under the guidance of Russell S. Penn of Talbert-Thomas Co. of Michigan, De-

troit, and the first speaker he introduced was J. F. Floreth of Westerlin & Campbell Co., Chicago. Mr. Floreth discussed the methods of merchandising air conditioning in the 5 to 20 ton class, pointing out some of the difficulties encountered in covering cost of estimating and engineering, in the face of competitive bids.

NARC 1948-49 Officers

President: H. E. Wheeler, Chicago, Ill.

1st Vice-President: R. W. Noll, Los Angeles, Calif.

2nd Vice-President: F. J. Zoppel, Columbus, Ohio.

Recording Secretary: Nathan Edelstein, New York, N. Y.

Treasurer: A. M. Palen, St. Paul, Minn.

Sergeant-at-Arms: Ralph W. Lampie, Richmond, Va.

Directors

E. S. Wright, Chairman, W. W. Farr, J. H. Lessard, G. T. Rostock, E. C. Newton, and James Terry.

J. W. Krall of Tyler Fixture Corp., Niles, Michigan, then spoke on how to sell commercial refrigeration equipment. Mr. Krall stressed the need of returning to the selling fundamentals of pre-war days, stating that it is not sufficient to make spot calls where the salesman thinks that he can make a sale. It is necessary to call on every possible outlet for refrigeration products and follow up each call exhaustively. Touching on the subject of goodwill, Mr. Krall defined it as "the disposition of the cus-

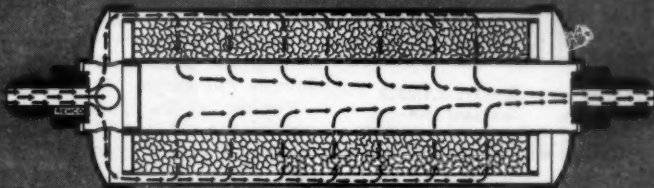
EVER HAVE A PLUGGED DRIER?

EVER FIGURE HOW MUCH
THEY COST YOU?



"Cross-Flo" DRIER-FILTERS

positively will not clog or plug
and pressure drop is entirely eliminated



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tomter to return to his original place of purchase."

H. E. Wheeler wound up this discussion with some pointers in selling room air conditioners. Mr. Wheeler expressed the opinion that salesmen must specialize on room coolers, doing nothing else but selling them in the summer season and adding only such items during the slack season that can be sold to the same customers. According to Mr. Wheeler, a separate department—even if it only includes one man—should be maintained for the sale of this equipment. "Never sell an air conditioner over the phone or across the counter," said Mr. Wheeler. "Always send a man out to go over the job even though your customer may appear to know exactly what he wants."

Upon the completion of this subject by the aforementioned speakers, a brief panel discussion among the three speakers was held, then the entire question thrown open to discussion from the floor. A large number of the questions from the floor were directed to Mr.

Floreth concerning the percent of cost to be added to overhead which Mr. Floreth estimated to be 25 to 30% in contracting work in the 5 to 20 ton field, together with a number of questions concerning markups and estimated profits based on certain markups. Mr. Floreth brought out during this discussion that it is sometimes desirable to sell the customer a 5% engineering fee on the larger jobs up to 500 tons—this in order to offset the high cost in estimating and engineering a job without definite knowledge of winning the bid.

The second discussion of the morning was on the subject "Service and Management Methods" presided over by S. Ray Thompson of Thompson-Hense Corp. of Chicago. The first speaker was Warren W. Farr, Refrigeration Maintenance Corp., Cleveland, who gave some interesting figures and methods on labor cost control. To illustrate his talk Mr. Farr passed out copies of a cost breakdown, of a daily record sheet and a cost summary sheet. His talk was followed by a discussion on parts inventory control by E. Stuart Files of R. Cooper, Jr., Inc. of Chicago. Mr. Files divided his controls into the accounting control and the operating control of inventories. His first classification "accounting control" is used to account for company property; the second is a control of daily needs. He stressed the need of well trained employees to handle inventory control, and for a simple but very accurate system kept up daily. A simple method of controlling and accounting for servicemen's stock of parts was also stressed because these stocks can very easily get out of hand and cost considerable money. Panel dis-

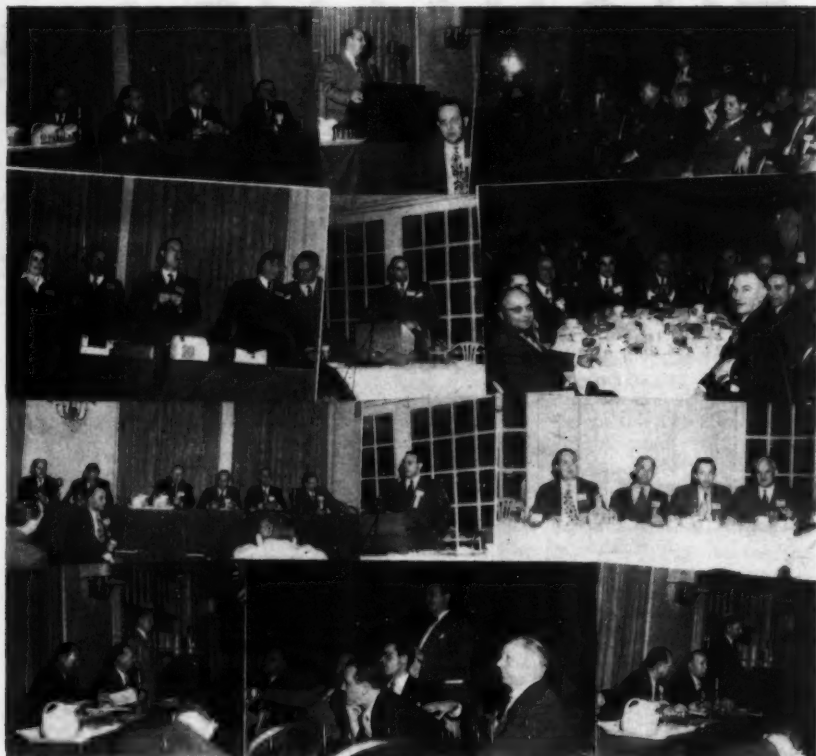
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These views of the NARC annual meeting and luncheon held in Chicago, Nov. 18 and 19, shows some of the activity of the meeting.

Photos by Irving Alter

cussion again followed these papers and again questions were received from the floor and answered by the two speakers on the subject.

A number of door prizes were raffled off at the close of the morning session, then the entire meeting moved to the Crystal Room for the luncheon.

Guarantees was the first subject of discussion during the afternoon session. F. J. Zoppel, Columbus Refrigeration Corp., Columbus, Ohio, was the moderator in charge. H. M. Kelso, Tecumseh Products Co., Tecumseh, Mich., spoke first from the viewpoint of the manufacturer of condensing units. Mr. Kelso, who stated that he was unable to speak for other manufacturers in the refrigeration industry, confined his talk largely to explaining his company's policy on guarantees and some of the

history back of the building of this policy.

H. W. Small, Thermal Co., Inc., St. Paul, was the next scheduled speaker. However, Mr. Small was unable to attend and Harry Jessel of the same company was asked to read his paper. In his paper Mr. Small expressed the opinion that guarantees should be reduced and related the expense the wholesaler has in handling parts returned under guarantees.

F. G. Coggin of Detroit Lubricator Co., Detroit, spoke from the standpoint of the manufacturer of valves and controls, relating to a large extent the policy adopted by his company. J. P. Glass, Chase Refrigeration Supply Company, Chicago, gave his opinion on the handling of valves and controls by the wholesaler.



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The final speaker on the subject, who outlined the contractors' difficulties due to the methods manufacturers have of guaranteeing their parts, was Emil Flanik, Allied Refrigeration Engineering Co., Cleveland, Ohio. Quite a large number of questions and considerable discussion followed these speakers which wound up with the suggestion being made that the contractors appoint a committee to work with a committee from REMA with a view to obtaining shorter and more uniform guarantee policies.

The second discussion of the afternoon "Service Sales Merchandising Methods" was conducted by Jack Baragar in the absence of George L. Johnston of Johnston Refrigeration Construction, Detroit, who was scheduled to handle it. H. L. Bransky on the subject "Service Sales" was the first speaker and outlined methods that can be employed by the service company in selling their services. Walter McCarty, McCarty Brothers Equipment Co., River Forest, Ill., talked on the subject of "Parts Sales", giving his opinion on how servicemen should be compensated for the sale of equipment and major parts, and also on the subject of whether or not new parts should be sold in preference to repairing old parts.

A paper on "Contract Sales" was read by Tom Reedy of Northtown Refrigeration, Chicago, substituting for H. O. Miller who was the scheduled speaker. Mr. Reedy's paper dealt with the selling of service contracts which provide complete service on a yearly contract basis for the customer.

The highly controversial question of licensing codes came up for discussion Friday morning, November 19. The panel was presided over by Frederick R. Bolton, Executive Secretary and Counsel for the Refrigeration Contractors Association of Detroit. John C. Rehard, Chief Refrigeration Safety Engineer of Detroit, gave his opinion on the benefits to the public under licensing. While expressing himself as not in favor of licensing, his paper showed that for Detroit, at least, there seemed no other way out of their problems.

The reasons against licensing were thoroughly expressed by Wm. B. Henderson, Executive Vice-President of the

Air Conditioning and Refrigeration Machinery Assn., Washington, D. C., in a rather lengthy paper. Mr. Henderson cited the experiences of other contracting groups who had been operating under licensing laws for many years. He also quoted a number of law suits brought against contracting groups which tend to show the abuses practiced under licensing arrangements.

N.A.R.C. Moves to Chicago

J. J. HELMINAK has resigned as Executive Vice President of the National Association of Refrigeration Contractors.

This resignation came as a result of moving the National Office from Cleveland to 228 North LaSalle Street, Chicago. The directors have not as yet announced a successor. Miss Edna Berggren will act as Executive Secretary in the new National Office.

In selecting this new location, the directors feel that Chicago is more centrally located and is the ideal place for the National Office.

Leslie D. Price of the National Electrical Manufacturers Assn., New York, read a paper on general licensing experiences in the electrical industry and strongly advised the refrigeration contractors group to avoid licensing of their contractors. Neal S. Templin, Executive Secretary of the Refrigeration Contractors Assn. of Los Angeles, related their experiences under licensing during the past number of years.

Nathan Edelstein, Refrigeration & Air Conditioning Guild in New York, spoke on the procedure necessary in preparing licensing codes. His discussion of the subject of course had to be general since only a general outline which will fit all communities is possible. The panel discussion and the questions and answers from the floor following this group of papers was extremely lively and it seemed to be the consensus of opinion that the contractors should give very serious thought and consideration to the long range results before going all-out for licensing codes in various communities.

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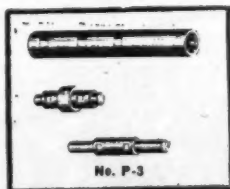
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GEORGE TAUBENECK ADDRESSES LOS ANGELES MEETING

GEORGE F. TAUBENECK, Editor and Publisher of Air Conditioning and Refrigeration News, of Detroit, Michigan, spoke before a large and enthusiastic crowd of nearly three hundred men from the refrigeration industry at a dinner meeting held in Los Angeles on November 9, 1948.

Mr. Taubeneck's topic was "Life With Bother", the theme being that the refrigeration business during the next few years would be increasingly bothered by such difficulties as shortages of materials, higher costs for parts and labor, more governmental regulation, and so on, so that the business man must use more and more ingenuity to become or remain successful than ever before.

He forecast that sales volume in the refrigeration field would remain at a high level for several years, barring the possibility of a shooting war which in his opinion is quite remote. However, he stated the day of the seller's market was rapidly becoming a thing of the past and that concentrated effort would be required to obtain prospects and make sales hereafter. Not only will the market for existing types of refrigeration equipment remain good, according to Mr. Taubeneck, but many new applications such as reverse cycle water heating, are now being developed and should be on the market in the near future. The expansion possibilities of the industry as a result of such new applications and developments appear almost unlimited.

In addition he recommended the

holding of adequate inventories both as a hedge against further price increases that he thinks are almost inevitable, and because of probable shortages that seem likely to develop in refrigeration equipment and parts because of the lack of sufficient steel and copper for our national needs during the next year or two, as larger quantities of these metals are diverted to our expanding armament program.

Mr. Taubeneck also pleaded with his audience to take positive action in the fight to stop communist infiltration in the United States. He pointed out that if we desire to retain the freedoms and privileges of the American way of life we must be willing to fight for them, for if we don't care we are liable to lose them by default.

The talk was enlivened by several excellent humorous stories, in the telling of which Mr. Taubeneck has no superior. He received a splendid ovation from his audience.

The meeting was jointly sponsored by five groups, the American Society of Refrigerating Engineers, the American Society of Heating & Ventilating Engineers, the National Association of Practical Refrigeration Engineers, the Refrigeration Contractors Association, Inc., of Los Angeles, and the Refrigeration Service Engineers Society. Mr. Ralph M. Westcott, Chairman of the Los Angeles Chapter of American Society of Refrigerating Engineers, and a member of three of the other groups acted as chairman of the meeting which those in attendance were almost unanimous in acclaiming, one of the largest and best meetings ever held by the refrigeration industry in Southern California.



Five refrigeration groups—the R.S.E.S., R.C.A., A.S.R.E., A.S.H.V.E., and N.A.P.R.E. combined November 9 in a meeting in Los Angeles, Calif., to hear George Taubeneck speak on "Life with Bother." Part of the crowd of 300 is shown in the above photo.



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Iowa State Meeting

Place: Montrose Hotel
City: Cedar Rapids, Iowa
Date: March 18, 19, 20
Secretary: R. M. Herbert, c/o
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Sponsored by Alabama Assn.
R.S.E.S.
Headquarters: Hotel Tutwiler
Exhibits and Meetings: Birmingham
Auditorium
City: Birmingham, Ala.
Date: February 4, 5, 6.

Interprovincial Association

Place: Mt. Royal Hotel
City: Montreal, Que., Canada
Date: March 28 and 29, 1949
Secretary: R. G. Henderson, 38
Bedford Park Place, Toronto,
Ont.

Wabash Valley Receives Charter

CHARTER presentation night for the Wabash Valley Chapter in Terre Haute, Indiana, was celebrated with a dinner which preceded the meeting of November 10. President Robert Turner opened the meeting and introduced Ed Riccio, Chairman of New Chapters and Jurisdiction Committee of the Illinois State Association, and Floyd Lilley, International Regional Director. Mr. Lilley presented the charter, read the purposes and objects of the Society, administered the oath of membership, and installed the officers. He was assisted by Mr. Riccio.

Present among the guests were Louis Townsend and Louis Hartzog of the Indianapolis Chapter. It was the Indianapolis Chapter that was instrumental in forming the Wabash Valley Chapter some time ago when Jack Salter, Tom Driskell, Louis Townsend, Henry Hoffmeyer and E. W. Wulf took a hand in the formation meeting.

On the educational program of the evening, Mr. Riccio played a recording of W. R. Rinelli's (Ansul Chemical Company) talk on the subject "Wax and Moisture in Refrigerants." This recording was taken at the Hoosier State Association convention and was furnished by the Indianapolis Chapter. Officers of the Wabash Valley Chapter are: Robert Turner, President, Dennis Cummins, 1st Vice-President; Edward Ellington, Secretary & Treasurer; J. H. Thomson, Recording Secretary; Herbert Williams, Sergeant-at-Arms; Carl Brady, Educational Chairman; and Carl Moeller, Publicity Chairman.

★ ★ ★

Long Beach Hallowe'en Party

By EDNA MURA

Secy. Long Beach RSES

GHOSTS! Goblins! Spooks! And Hoodlums! They were all present at the Hallowe'en Party given by the Ladies Auxiliary of the RSES of Long Beach. This most successful affair was held at Murphy's Barn, a very appropriate setting, uniquely decorated and arranged. This, the first annual gala party, was held on the evening of Saturday, October 23, starting at 7:30 p.m. and lasting until the wee hours of the morning when the last guest departed.

The evening's entertainment consisted of dancing to the music of Bette Jepson, her piano and her five piece string orchestra composed of Mrs. E. L. Murphy, accordionist, who is also President of the Ladies Auxiliary of Long Beach; Rhee Bunker, electric guitar, a member of the Long Beach RSES; Kenny Van Dyke, bass viol; and Bob Brenden, violinist.

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The carnival spirit was carried out in the following booths listed with their attendants: Dart and Balloon Game, Mrs. Robt. Schooler; Apple Ducking, Mrs. Al Eisenbeiss and Mrs. Paul Travers, who also manned the Thrills and Chills Booth; The Fish Pond, Mrs. Troy Langwell and Mrs. Tommy Ringrose; Fortune Telling, with its electrical primer, Mrs. Joe Mura and Mrs. Al Haun; Men Only and Women Only, Mrs. H. Courville and Mrs. Demarest Voorhis; Penny Pitch, Mrs. Lloyd Cook, Mrs. Carl Patten and Mrs. Lyle Evans; Bottle Fishing, Mrs. Stu Bell, Mrs. Bob Nichols and Mrs. Lyle Evans; The Bar, with its many attractions, was manned by Stu Bell and Demi Voorhis. The use of the P.A. system was donated and ably handled by Mr. Robt. Schooler. One of the most popular of the entertainment features was the Bingo game operated by Paul Travers, Joe Mura and Larry Ostrander.

Bob Nichols manned the raffle with Mrs. Eggleston of San Pedro winning the

electric casserole, Mrs. Ed. Murphy the electric iron, Mrs. Emerson Burgess of Santa Ana the \$10.00 cash prize and Harold McQuay of Los Angeles winning the grand prize, a lovely wool blanket.

The costume judges, Tom Renzi, Troy Langwell, Emerson Burgess and Ed Murphy, had a very difficult time in picking the winners from the galaxy of very beautiful and varied costumes. Among the finalists were Mr. and Mrs. H. Courville, Mr. and Mrs. B. P. Coffman, Mr. and Mrs. Leo Kannon of Bakersfield, Mr. and Mrs. Al Haun, Mr. and Mrs. Carl Patten, Jim Robinson of Orange County, Mr. and Mrs. Lloyd Cook and Mr. and Mrs. Pat Riley, the latter couple winning the prizes, an electric hair dryer and a \$10.00 merchandise order at a men's store. One of the most beautiful costumes was an authentic Spanish gown worn by Mrs. Kimbal Johnson of Pasadena.

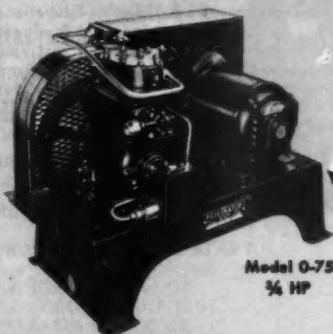
All dignity ceased when the smorgasbord luncheon was prematurely an-



The Long Beach Ladies Auxiliary were responsible for the Hallowe'en party pictured above. It was a full night of fun and surprises for the 250 visitors who came from nearly all Southern California chapters. Costume contest winners (2) were Mr. and Mrs. Pat Riley. The "eternal triangle" is enacted (4) when "Madame" Joe Mura showers affections on "slicker" Paul Travers while "clown" Larry Ostrander jealously looks on.

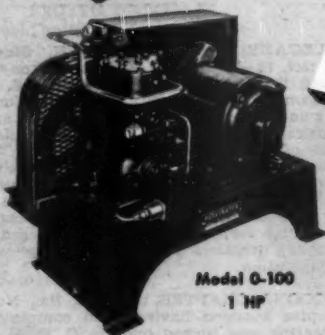
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nounced and the 250 or more guests stampeded through the dining hall, where Ed. Murphy and his kitchen vassals were attempting to prepare the food. Very luckily no casualties were reported. Mrs. Mary Riley also lost her dignity in trying to serve cider from the single spigot! Bob Chambers, President of the Compton Hub Chapter, thoroughly enjoyed his artistically prepared Dagwood sandwich.

The many plans and arrangements for the party were supervised by General Chairman Mrs. E. L. Murphy, who was ably assisted by the following committees: Asst. Chairman, Mrs. Pat Riley, Planning Committee was Edna Mura, Mae Nichols, Margaret Bell, Nora Ringrose. Entertainment Committee, Mrs. Al Eisenbeiss and Mrs. Paul Travers; Food Committee, Mrs. Demarest Voorhis and Mrs. Fred Riley.

Practically all Southern California Chapters were represented. President Charles Rush of the San Fernando Valley Chapter and his charming wife were among the merrymakers.

"Pass the Grapefruit" was one of the most hilarious events arranged by the entertainment committee. Others were "The Broom Dance" and Old Time Dancing with the aid of a professional caller. A professional photographer was present so that the memories of this happy occasion may live until the next annual Hallowe'en party.

★ ★ ★

San Antonio Gets Charter

OFFICIAL presentation of the charter of the San Antonio Refrigeration Association chapter of the Refrigeration Service Engineers Society, was made at Comanche Park, San Antonio, Texas, September 29th. C. W. Neisel of Corpus Christi, Texas regional director, explained the objectives of the Society, administered the oath, and presented the charter. W. A. Moore, President, accepted for the chapter of which there are seventy-five charter members. A number of certificates and cards were presented to the members.

There were approximately 350 present, including members, their families and friends. Guests were Pete McCarty of Sporland Valve Co., Barney Arbuckle of Virginia Smelting and Wagner Motors,



Left to right in this photo are: W. S. Anderson, Secretary-Treasurer; E. B. Parson, Educational Chairman; L. J. Jenschke, 2nd Vice-President; W. A. Moore, President; A. J. Arnold, 1st Vice-President; and C. P. Curry, Sergeant-at-Arms. The occasion of the photo was the charter presentation to the San Antonio Chapter where 350 witnessed the ceremony.

Bing Billings and Ray Polley of Ansul Chemical Company. After the presentation refreshments were served.

★ ★ ★

CHAPTER NOTES

● **ALLEGANY VALLEY CHAPTER, Olean, N. Y., Oct. 12**—President Les. Wanamaker introduced the speakers of the evening—E. L. Burlingame of the McIntyre Connector Company who delivered a convincing lecture and demonstration on moisture control and dehydration of refrigeration systems, and C. E. Burlingame of Brunner Mfg. Co., who gave an illustrated talk on the manufacture of Brunner highside units. The Burlingames are a father and son team, and after the presentation of their respective lectures, answered a great many questions pertaining to all phases of refrigeration.

● **ALTOONA CHAPTER, Altoona, Pa., Nov. 3**—Chapter business having been completed, the meeting was turned over to G. C. MacAlarney, Chairman of the Educational Committee, who presented the guest speaker, Horace I. Schmidt, district representative for the Bush Mfg. Co. He gave an interesting discourse on load calculations, component factors thereof, proper sizing of lines, especially at low temperatures, coil selection and proper balancing of coils with condensing unit. He pointed out that since there are more coil sizes available from which to choose, it is considered best to select the condensing unit first according to the load and then balance the coil size to the condensing unit chosen, giving due consideration to temperature difference and the desired humidity. The effect of air velocities on humidity was also discussed. Mr. Schmidt then closed and following adjournment, refreshments were enjoyed.

● **ARROWHEAD CHAPTER, Riverside, Calif., Nov. 8**—This meeting was attended by 29

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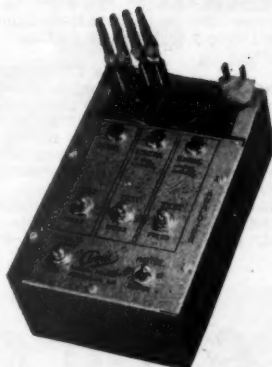
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members and 13 visitors and was preceded by a round table discussion on refrigeration problems. The educational program was provided by Phil Kilgore of the Robert B. Holland Co. of Los Angeles, representing Kramer Trenton Co. Mr. Kilgore gave an illustrated lecture on Kramer products, which was well received, with many questions and answers. A Marsh indoor-outdoor thermometer, donated by Chas. Olbright (Valley Refrigeration Supply) was the prize for the evening. Refreshments of sandwiches and coffee were served by Mrs. Bird and Mrs. Parker.

● **BERKSHIRE COUNTY CHAPTER, Pittsfield, Mass., Oct. 22**—During this business meeting the application of Herbie Baldwin for junior membership was voted on and he was accepted into the chapter.

The highlight of the November 11th meeting was an illustrated talk given by a representative of the Dayton Belt Company.

● **BORDER CITIES CHAPTER, Ontario, Canada, Sept. 24**—Due to the press of business, Van Waffle found it necessary to submit his resignation as chapter Secretary, and Al Dotto was appointed to take his place. Other chapter officers are: Lorne Kettlewell, President; Ted Joliffe, 1st Vice President; Bud Houston, 2nd Vice-President; Nels Johnson, Treasurer; A. Wilson, Sergeant-at-Arms; and Thomas Savill, Educational Chairman. Board of Directors—Ev Arrand, Chairman, Ray Miller, Dick Bannister, E. McDonald, Harry Duby, Les Hillis and Dewey Hamilton.

● **CANTON REGIONAL CHAPTER, Canton, Ohio, Oct. 19**—Twenty-four members attended this combination dinner and business meeting. Two new men were accepted into the chapter—namely, W. J. Davis as an associate member and W. A. Warner as a junior member. A discussion was held concerning a refrigerator that had blown up causing considerable damage to a kitchen ceiling, followed by a brief talk on safety given by the

New Chapter in Danville, Ill.

A GROUP of men met at Francis Frazee's home in Danville, Illinois, for the purpose of forming a new chapter in that area. Willis Stafford and Ed Riccio of the Illinois State Association explained the details to the group and thirteen of those present signed applications for membership.

The new chapter will be known as the Vermillion Chapter and the officers elected are: Harry Spear, *Temporary Chairman*; Merle Weaver, *Secretary-Treasurer*; and Dale Smith, *Sergeant-at-Arms*.

President. Drawing for the attendance prize amounted to \$4.00 but the winner Lloyd Yoho was not present so the amount will be increased to \$6.00 for the next drawing. The following movies were then shown: "Mining of Copper from the Mine to the Finished Product" by the Wolverine Copper Co., "The Zale-Graziano Fight" and "Football Thrills of 1947-48."

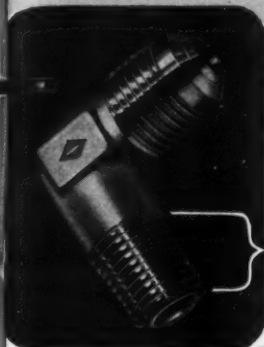
● **CHARLESTON, S. C. CHAPTER, Charleston, S. C., Oct. 27**—After the business meeting was completed, the program was turned over to Mr. Schlemmer, Refrigeration Manager for General Controls, who gave an interesting lecture on refrigeration, followed by a general discussion of problems encountered.

● **CHARLESTON, W. VA. CHAPTER, Charleston, W. Va., Oct. 8**—Applications of two new members—Sherel A. Waldo and Cecil V. Pat-



The Vallee du St. Maurice Chapter received its charter recently from Nap. Brossoit, International Director, assisted by J. M. Turner of Interprovincial Assn. Thirty-eight members received certificates during the presentation meeting which was the occasion of the above photo. Seated, left to right, are A. Wright, General Electric Co., speaker of the evening; Nap. Brossoit; J. M. Turner, Vice-President Interprovincial Assn.; A. Patton and A. Jacob, Educational Chairman.

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to give you joints with triple-seal tightness.

IMPERIAL ^{TRIPLE*} SEAL FLARE FITTINGS

When the flare nut is drawn up, the copper tubing is forced into the groove making a tight, self-sealing joint. Extra length pipe threads on pipe ends provide still further protection against leakage . . . flare ends protected by plastic caps. Nuts, tees and elbows made from brass forgings.

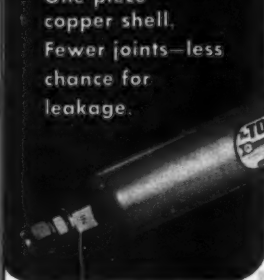
*On sizes $\frac{3}{8}$ " O.D. and larger.

3 seals give you new extra protection against leakage.



EXTRA
LENGTH
PIPE
THREADS

One-piece
copper shell.
Fewer joints—less
chance for
leakage.



IMPERIAL *TORPEDO* DRIERS

. . . designed for faster, more efficient
drying action . . . for longer operation
without cleaning.

The most formidable weapon in the war on moisture. Has one-piece copper shell; joints are brazed; charged with dust-free Silica Gel. Has metallic depth filtration element, graduated with size of drier. Easy to refill; interchangeable connections on larger sizes. A complete line to meet all refrigeration applications.

Speed Tubing Connection Work with IMPERIAL TOOLS



HI-DUTY TUBE CUTTER Free-wheeling ball bearing action. Roller type with flare cut-off groove. Makes clean, right angle cuts. Retractable. No. 274-F . . . for $\frac{1}{8}$ " to 1" O.D. tubing.



HI-DUTY FLARING TOOL Makes precision SAE flares on copper, brass or aluminum tubing—without scoring the tubing. Single-nut clamping. No. 300-F . . . flares $\frac{1}{4}$ ", $\frac{3}{16}$ ", $\frac{1}{2}$ ", $\frac{3}{8}$ " O.D. tubing.



HAND TUBE BENDERS Calibrated open side bender. Makes smooth, well-formed bends to a short radius . . . any angle up to 180°. No. 364-F . . . individual benders for each size of tubing from $\frac{3}{16}$ " to $\frac{3}{4}$ " O.D.



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ton—were voted upon and accepted. The educational program consisted of a recorded lecture by H. F. Hildreth entitled "The Road Ahead."

● **CHICAGO WEST TOWNS CHAPTER, Melrose Park, Ill., Oct. 26**—The meeting opened with Charles Ettner giving a report of the arrangements that had been made for the chapter's 1st annual dance at the Veterans' Field House in Melrose Park on December 18. Mr. Goddar of Carrier Corp. gave a lecture, illustrated with slides, on the new direct connecting high speed compressors manufactured by his company. This drew a great many questions from the 39 members present at this meeting. Willis Stafford and Dick Hendrickson explained the advantages of belonging to the state association. Refreshments were served through the courtesy of Service Parts Company who sponsored the meeting.

● **COMPTON HUB CHAPTER, Compton, Calif., Nov. 17**—The meeting was held at Del Conte's Cafe in Lynwood. Educational Chairman M. I. Francis introduced J. F. Dickson, license collector and refrigeration inspector for Compton, who gave a short talk on refrigeration codes. Next, Capt. J. W. Verbeck of the Compton Fire Department in charge of fire prevention detail, spoke on fire prevention and its relationship to refrigeration and electrical appliances. Lt. Dick O'Shaughnessy of the Lynwood Police Department was then introduced. He welcomed the Society to Lynwood on behalf of the city and Police Chief Paul Kerr who could not be present. J. Pat Riley took over the program from there

—giving the obligation to two new members.—A. Moore of Bellflower and B. Schollnick of Compton.

● **DAYTON CHAPTER, Dayton, Ohio, Oct. 28**—"Refrigeration of Fresh Meats" was the educational topic chosen for discussion by John Becker. This was followed by a general discussion on the self service type of display case.

At the November 11th meeting, L. A. Jackson and Clifford R. Scott were accepted as associate members. A committee was appointed to complete arrangements for the chapter's Christmas party. A nominating committee was also appointed. John Becker then led a discussion on the B.S.A. educational bulletin "Installation of Commercial Equipment."

● **ELM CITY CHAPTER, New Haven, Conn., Nov. 3**—Over 50 members were present at this meeting, the largest attendance enjoyed by this chapter for some time. Lester Harris introduced Fred W. Sehl, Chemical Engineer for the Aetna Casualty Insurance Co. and his assistant, Bernard J. Havens. They gave a very interesting demonstration on causes of dust explosions. One teaspoon of dust in the form of a cloud really made quite a flash and explosion. John Meiklejohn, engineer for McIntire Connector Co., gave a talk and demonstration on DFN driers and moisture indicators. A discussion period followed both demonstrations. Refreshments were served after the meeting.

● **FAIRFIELD COUNTY CHAPTER, Fairfield County, Conn., Nov. 8**—A discussion was held

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To Make Sweat Fittings

with
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OPEN
FLAME**



IDEAL "Thermo-Grip"
SOLDERING TOOLS

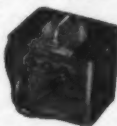
FASTER "Thermo-Grip" operates on the resistance heating principle — gives *instant heat*. No preheating — no preparation. Just grip the pipe or tubing in the "Plier" attachment and in only 2 minutes bring 1½" copper tubing to silver soldering heat.

EASIER "Pliers" grip the work, leaving the other hand free to handle the solder. Heat is always concentrated where needed — handy thumb switch permits constant, close heat control. Easily portable, the combination power unit and carrying case provides space for tools, leads and parts; weighs only 25 pounds.

Ask your Wholesaler for Free Demonstration and full details today.

SAFER "Thermo-Grip" may be used with complete safety near walls or ceiling. No open flame or fumes. Resistance heating principle concentrates the heat at low voltage. Can be used for long periods without overheating. Safe for the operator, too, because the unit is fully insulated.

BETTER Assures full adhesion of solder to tube and fittings. Accurate control provides uniformity of work — no waste, damage or spoilage. Adaptable to all types of soldering jobs, with "Plier," "Pencil" and "Fork" attachments. IDEAL INDUSTRIES, Inc., Sycamore, Illinois.



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regarding certificate members. It was decided to take a count at the next meeting to find out how many members are interested and the necessary procedure started. The educational portion of the meeting was a very interesting film, orated by Paul Reed, on Reverse Cycle Refrigeration.

● **FORT WAYNE CHAPTER, Fort Wayne, Ind., Oct. 13**—This was designated as "Bosses Night" since the members invited their bosses as guests. After proper introductions and the reading of several reports, Walter Kaiser gave a short discourse on motor ratings, old compared with new, and how their output will compare in service. Walter Gildea, Educational Director, led a question and answer program with a slide and sound lecture on "The Effect of Refrigerants on Oil." Thirty-four signed the attendance register.

On November 10th a dinner meeting was held. President Hughes appointed a nominating committee consisting of O. O. Hendricks, L. E. Beard and C. F. Batz. The speaker of the evening was Walt Sunier of the General Electric Co. on the subject "Small Motors and Their Applications."

● **GARDEN STATE CHAPTER, Newark, N. J., Nov. 18**—Eighty-six members and guests met on this date at Ray's Hall to hear S. A. Anderson of Detroit Lubricator Company give an outstanding talk on the subject of "Solenoid Valves," with the aid of a wire recorder and slides. An interesting question and answer period followed which lasted about 20 minutes. Lester Wooley, a serviceman at Fort Monmouth, won the turkey that was donated by the chapter as door prize.

● **GRANITE STATE CHAPTER, Manchester, N. Y., Nov. 9**—It was moved and seconded to hold all future meetings the second Friday of each month and to take permanent headquarters at the Manchester YMCA. Four new members were admitted during the meeting. They are Edward M. O'Brien, Arthur Ancill, James H. Folland, Jr. (active members) and Maurice Simard (junior member). President Hall then turned the meeting over to Educational Chairman Cobe who introduced the speaker for the evening, Fred Binns of Virginia Smelting Co. Mr. Binns brought with him three movies which were shown—one educational and two entertaining. At the conclusion of his remarks Mr. Binns was tended a rising vote of thanks from the members.

● **GREENSBURG CHAPTER, Greensburg, Pa., Nov. 1**—Three new members were introduced to the chapter—C. E. Springer, Edward M. King and Henry Shuber. A. L. Milazzo reported on the progress that had been made in regard to the dairy and ice cream men in the Johnstown district. O. J. Daniels from the Spurland Valve Co. provided the educational program with his lecture on solenoid valves.

● **GREENVILLE CHAPTER, Greenville, S. C., Nov. 10**—The attendance at this meeting was improved due to the sending of cards and letters by the Secretary asking the members to come out and support their chapter. Dick Ryer gave a brief talk on promoting safety

in the refrigeration industry, asking all members to give an account of some accident that happened to him or his employees and discuss means to prevent further accidents of that type.

● **HEAD OF THE LAKES CHAPTER, Duluth, Minn., Nov. 9**—The chapter was grieved over the death of one of their members—Howard Hoge of Hibbing, Minn., who was drowned while hunting ducks north of Hibbing. Misfortune also struck Dave Shaw, who was badly burned a short time ago and was reported in the hospital. Two members were voted upon and accepted into the chapter—H. J. Nelson (active) and Del Nielson, Jr. The door prize—a Mini Volt Voltmeter—was won by Frank Fabini.



Shown in the above photo is a project made for the Mississippi State Fair, October 11th. It consists of a rebuilt Frigidaire compressor, A-P automatic expansion valve, Ranco thermostatic control, with the evaporator forming the letters H J C—the initials of Hines Junior Chapter.

All the work on this project was done by the members of Hines Junior Chapter.

● **HINDS JUNIOR CHAPTER, Raymond, Miss., Nov. 28**—Election of officers took place at this meeting with the following results: Bernard J. Elmerick, President; George Stennett, Vice-President; and William P. Sikes, Jr., Secretary-Treasurer. Membership of this chapter is entirely made up of students of refrigeration at Hinds Junior College.

● **HUDSON MOHAWK CHAPTER, Schenectady, N. Y., Oct. 5**—A very fine educational program was arranged for this meeting. Paul O. Dompke and C. A. McDermott, representatives of Mueller Brass Co., were the speakers. Mr. Dompke gave an interesting talk on the use of Mueller sweat fittings and how they are made. Mueller manifolds and the use of their new type manifold shut off seat. He then gave a brief talk on dehydrators and their positions in the liquid line, and a demonstration of sweat soldering and

OUTSTANDING FEATURES

6. Smooth pleasing appearance — symmetrical design.
7. Individual wrench pads for tightening flare connections.
8. Unique sweat connections permit soft or silver soldering without removing internal assembly.
9. High quality, long wearing, seating insert.
10. No special tools required for servicing.



Superior ANGLE VALVES					
CATALOG NUMBER	CONNECTIONS SIDE BOTTOM	LIST PRICE EACH	NET WT EACH LBS	CODE WORD	
	SAE Flare	Male Pipe			
104-48	1/2"	1/2"	\$5.00	75	Lelon
104-60	3/4"	3/4"	5.00	75	Letro
104-66	1"	1"	5.00	75	Legas
104-88	1 1/2"	1 1/2"	5.00	1.00	Legon
105-88	1 1/2"	1 1/2"	5.00	1.00	Lelec
105-96	2"	2"	6.00	1 25	
106-100	2 1/2"	2 1/2"			

Superior ANGLE VALVES					
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104-66	1"	1"	5.00	75	Legas
104-88	1 1/2"	1 1/2"	5.00	1.00	Legon
105-88	1 1/2"	1 1/2"	5.00	1.00	Lelec
105-96	2"	2"	6.00	1 25	
106-100	2 1/2"	2 1/2"			

SHUT-OFF VALVES*

CATALOG NUMBER		CONNECTIONS	LIST PRICE EACH	NET WT. EACH LBS.	CODE WORD
204-4	SAE Flare		\$3.30	.9	Lelim
204-5			5.30	1.25	Lelios
205-8			5.30	1.25	Lelmal
206-10			6.60	1.5	Lemjo
204-45	O.D. Sweat		5.30	.9	Lemuz
204-65			5.30	1.25	Lenas
205-85			6.60	1.5	Lenek
206-105					Lemon

CATALOG NUMBER		CONNECTIONS	LIST PRICE EACH	NET WT. EACH LBS.	CODE WORD
204-4	SAE Flare		\$3.30	.9	Lelim
204-5			5.30	1.25	Lelios
205-8			5.30	1.25	Lelmal
206-10			6.60	1.5	Lemjo
204-45	O.D. Sweat		5.30	.9	Lemuz
204-65			5.30	1.25	Lenas
205-85			6.60	1.5	Lenek
206-105					Lemon

CATALOG NUMBER	CONNECTIONS	LIST PRICE EACH	NET WT. EACH LBS.	CODE WORD
304-4	SAE Flare	\$6.35	1.00	Lepcon
304-6		6.35	1.00	Lepcon
305-8		6.35	1.50	Lepcon
306-10		7.50	1.75	Lepcon
304-4	O.D. Street	6.35	1.00	Lepcon
304-6		6.35	1.00	Lepcon
305-8		6.35	1.50	Lepcon
306-10		7.50	1.75	Lepcon

CATALOG NUMBER	CONNECTIONS	LIST PRICE EACH	NET WT. EACH LBS.	CODE WORD
304-4	SAE Flare	\$6.35	1.00	Lepcon
304-6		6.35	1.00	Lepcon
305-8		6.35	1.50	Lepcon
306-10		7.50	1.75	Lepcon
304-4	O.D. Street	6.35	1.00	Lepcon
304-6		6.35	1.00	Lepcon
305-8		6.35	1.50	Lepcon
306-10		7.50	1.75	Lepcon

Superior Valve and Fittings Co.



LOS ANGELES (AP) — A...

the use of flux. Mr. Dompke next conducted a soldering contest, giving a hermetic service kit as first prize.

At the November 3rd meeting, Educational Chairman Douglas Marshall introduced Otto J. Nussbaum and Robert Tankle of Kramer Trenton Co. Mr. Nussbaum spoke briefly on different methods of defrosting coils in cold temperature work. He brought out their good and bad points. With the use of slides, he spoke on the use and application of the Kramer Thermobank for defrost in cold temperature work. The talk was highly educational as many of the chapter members had experiences along this line at various times.

● **ILLINI CHAPTER, Champaign, Ill., October**—After a brief business meeting, the program was taken over by J. H. Johnson, who presented a film on Reverse Cycle Refrigeration.

● **INDIANAPOLIS CHAPTER, Indianapolis, Ind., Oct. 26**—The ladies were present at this meeting for the purpose of forming an Auxiliary. The men present who had not brought their wives were asked to tell them about it and bring them to the next meeting. A nominating committee consisting of Messrs. Riches, Collins and Clark was selected to present a slate of officers for the forthcoming election.

● **LONG BEACH CHAPTER, Long Beach, Calif., Nov. 10**—The experts who conducted the round table discussion before the meeting were Bud Habener of General Controls Co. and Phil Kilgore of Kramer Trenton.

Also present was O. J. Trimble of the National Federation of Small Business, Inc., who explained his association, its purposes and its results. President Langwell appointed Al Eisenbeiss, Al Haun, Lee Bradford and D. A. Robbins to serve on the Constitution and By-Laws Committee along with Chairman Pat Riley. The president then introduced the Auxiliary officers to the meeting. Raffle prizes were won by Ed Murphy, John Grimes, Lloyd Cook, Al Haun and Garritt VanGinkle. Refreshments, prepared by Al Eisenbeiss and crew, were enjoyed by members of both the chapter and auxiliary. There were 36 members and 14 visitors in attendance.

● **METROPOLITAN NEW YORK CHAPTER, New York, N. Y., Oct. 22**—Eight new members were introduced and sworn in. The first part of the educational program was a short but informative talk given by Mr. Simpson of the Texas Oil Co., on refrigeration oils, their action, uses and composition. The second part of the program was a demonstration put on by Mr. Weldon of General Controls Co. The use and application of their new adjustable orifice $\frac{1}{4}$ ton valve was ably shown by the use of a portable unit using a Pyrex evaporator. This was thoroughly enjoyed by all 52 members and guests present. Door prize for the evening was won by J. Kaminsky.

● **MIAMI CHAPTER, Miami, Fla., Nov. 10**—Armand A. Masse, a member, gave a talk on the psychrometric chart and how to use it in figuring and calculating refrigeration and air conditioning in everyday problems. Mr. Brown explained to members about a trip

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trip

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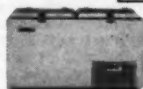


18 cubic foot
Model 2187



9 cubic foot
Model 197

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popular models
to match every
family need.



12.5 cubic foot
Model 2127



6 cubic foot
Model 167

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A likewise interesting meeting was held on November 24th. Educational features included a talk by E. T. Buyama, telling how to find the terminals in sealed motors with an ohmmeter by testing the combinations of terminals; and a discussion on the K factor and U factor by J. P. Dolard, in which he revealed how the U factor is arrived at by the use of the K factor. Mr. Hartzog of the Indianapolis chapter was a visitor.

● **NEW BRUNSWICK-PRINCE EDWARD ISLAND CHAPTER, St. John, N. B., Oct.**—New 1948-49 officers for this chapter are as follows: T. E. Andow, President; Sterling Barrett, 1st Vice-President; Fred Walker, 2nd Vice-President; E. D. Ervin, Secretary; Alfred LaFlamme, Treasurer; and Gordon Y. Dow, Sergeant-at-Arms.

● **NIAGARA FRONTIER CHAPTER, Buffalo, N. Y., Nov. 12**—This was a dinner meeting with 38 members and guests present. A nominating committee, headed by J. Muller as chairman, and including L. McCormick, H. Horning, R. Davis and J. Kern, was appointed. An educational talk with pictures, entitled "Servicing the Fedders Window Air Conditioner" was given by A. Keirn of Fedders Company. A transcribed talk on "Safety" was given by Paul Reed.

● **NOVA SCOTIA CHAPTER, Halifax, N. S., Nov. 10**—A short business meeting was held, after which three short films, supplied by

Educational Chairman G. Wilson, were shown. Refreshments were served through the courtesy of Manning Equipment Co.

● **ONTARIO MAPLE LEAF CHAPTER, Toronto, Ont., Oct. 15**—H. L. Donnell, Educational Chairman, introduced H. Parish on the educational program. Mr. Parish, assisted by three experts, namely C. G. Heilig, C. R. Davis and W. J. Marshall, conducted a question and answer period covering feed control of refrigerant by means of expansion valves, capillary tubes and high and low side floats. Mr. Parish directed this program in his usual capable manner and from the interest shown during the discussion, this form of meeting met with the approval of members. Registration at this meeting totaled 95.

● **PHILADELPHIA CHAPTER, Philadelphia, Pa., Nov. 15**—Bob Keil, back from the Boston conference, presided at this meeting. Final announcements pertaining to the annual banquet, an outstanding event of its kind in Philadelphia, were made by the chairman of the banquet committee, John A. Locicento. After the enthusiasm created by a lively discussion of the anticipated success of the banquet subsided, the meeting turned to its basic purpose of education, and H. A. Tippet of Hajoca Corp., was introduced as the speaker of the evening. His topic, "Merchandising and the Serviceman" was well received. At the conclusion of Mr. Tippet's talk, Miss B. Kesselman of Raymond Rosen & Co., made a few additional remarks in keeping with the topic.

MANY RESTAURANTS—HOSPITALS—CLUBS IN YOUR AREA NEED NEW EQUIPMENT

Here is your opportunity to sell your customers a NEW 20 or 30 cubic foot porcelain interior and exterior reach-in refrigerator complete with CONTROLLED Forced Air-Flow lowside and nationally known open type condensing unit.

20 cu. ft.—Complete \$443.00

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larger sizes also available

All prices F.O.B.
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COR-O-NET Merchandise Specialties

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Chicago's largest outlet for used refrigerators.

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SPECIFICATIONS

P20—20 cu. ft.; 1/4 H.P. unit;

46 1/2" W x 30" D x 73 1/2" H

P30—30 cu. ft.; 1/3 H.P. unit;

54" W x 30" D x 73 1/2" H

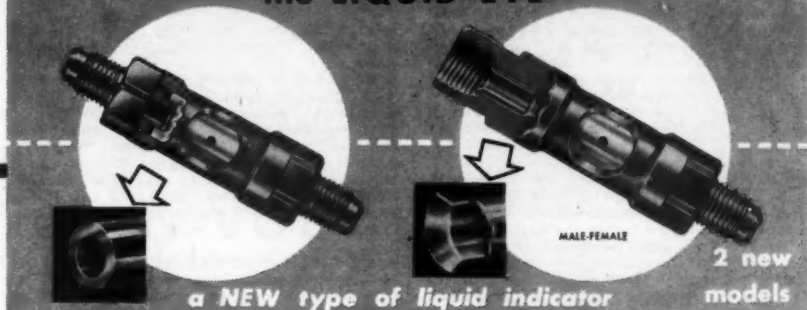
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Return Air-Flo duct built into cabinet wall.

Open type, standard make condensing unit.

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Fully enclosed **GASKET**

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Lapped **GLASS**

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DOUBLE PORT
ELIMINATES PRESSURE DROP
POSITIVE REACTION OF INDICATOR
FLOATING PYREX TUBING INSURES SAFETY
PLIABLE GASKETS, IMPERVIOUS TO
REFRIGERANTS AND OIL

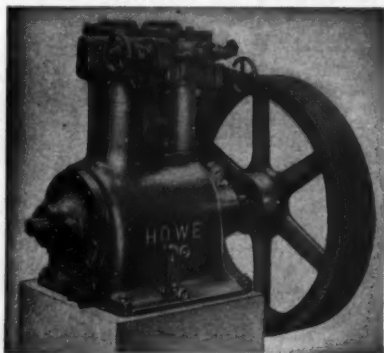
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Trouble-free operation cuts risk of food spoilage. Saves money . . . time. Let Howe's 36 years of specialization solve your refrigeration problems with equipment *basically* right. Howe machines *give less trouble . . . keep running longer*. They're *designed* to do that. Inquiries invited.



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Ammonia compressors 2 to 150 tons; self-contained automatic ammonia units; methyl and Freon condensing units; shell and tube condensers; brine and water coolers; unit coolers; fin coils; locker freezing units; air conditioning (cooling) equipment.

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December, 1948

● **PITTSBURGH CHAPTER, Pittsburgh, Pa., Oct. 22**—The educational program consisted of a number of recordings by Paul Reed covering "Oil and Refrigerant Mixture." Mr. Reed's talk was illustrated with a series of slides that proved to be very informative and interesting to those present. A short business session followed in which the main topic of discussion was ways and means of improving attendance at the regular monthly meetings.

● **PROVIDENCE CHAPTER, Providence, R. I., Nov. 3**—During the business meeting a letter was read from John J. Madden concerning a fire in the home of Charles Hughes of Waterbury, Conn., Secretary of the New England States Association, and it was unanimously voted to provide aid to the family of Mr. Hughes. A. W. Barr of the Penn Electric Switch Co. was the speaker of the evening and gave an excellent talk accompanied by color slides which showed the construction and operation of Penn controls and valves that are available through local wholesalers. While refreshments were served a "joke session" was held. Two door prizes were awarded. Walter Jones won a new Imperial flare block assembly and Forest Bryant won a Marsh pocket thermometer, both of which were donated by the A. E. Borden Co. of Boston. Sound movies, starring Bob Hope, were then shown by Treasurer Spidel.

● **QUINCY CHAPTER, Quincy, Ill., Sept. 20**—International Director Floyd Lilley presented the chapter with its charter during this meeting. The chapter secretary found it necessary to resign from his post and Henry Brueske was elected to take his place. At the end of the meeting a rising vote of thanks was given to Jack White and Dick Rischke of Republic and Forest Olmstead for making this meeting and banquet possible.

During the meeting of November 15, Ever-

ett H. Wood and John J. White were accepted as new members. The educational program was provided by Mr. Kohl and Mr. McKee of Detroit Lubricator Co., who gave a talk and showed educational slides.

● **ROCKFORD CHAPTER, Rockford, Ill.**—New officers elected for 1948-49 are: Leslie L. Sturch, President; John A. Chapman, 1st Vice-President; Roy Erickson, 2nd Vice-President; Mervin J. Hetland, Secretary; Charles Harezlak, Treasurer; Robert Altenbern, Sergeant-at-Arms; and Earl Seaton, Educational Chairman. Board of Directors—Jim Hughes, Harry Wardecker and R. C. McCarthy.

● **ST. LOUIS CHAPTER, St. Louis, Mo., Oct. 26**—Attendance at this meeting totaled 44. Bill Simpson of Texaco Co. spoke on the educational program. He gave a good talk on the requirements of a good oil for refrigeration purposes and stressed the prevention of contamination of the oil before it reaches the compressor.

The meeting of November 23rd enjoyed the huge turnout of approximately 200 members and guests. The speaker, Kenneth Newcum of the Remco Co., was introduced by J. H. Spence, who has just been elected Chairman of the International Educational and Examining Board. Mr. Newcum gave a very splendid talk on "Moisture Control in the Refrigeration System." The members and guests were very enthused with the program and made numerous inquiries during the question and answer period. A buffet lunch was served after adjournment.

● **SEATTLE CHAPTER, Seattle, Wash., Nov. 2**—President Campbell displayed the new question box and also called upon Mr. Yates to explain a new attendance incentive system to the membership—this to consist of tickets to be sold and member holding winning



At the last meeting of the Vallee du St. Maurice Chapter, a lecture was given on "Brazing and Soft Soldering" illustrated with slides, by J. S. Fullerton. This was followed by a tube bending contest, the winners of which were E. Fournier of Shawinigan Falls, and R. Garon of Tree Rivers. Material was furnished by the Railway Engineering Co. of Montreal. Judges were J. R. S. Sels of Shawinigan Falls, R. Therien of the Canada Iron Foundry, P. E. Lamothe and J. C. Dorval, both of the Tree Rivers Tech. Pictured above, left to right, are C. H. Buckland, R. Therrien, P. E. Lamothe, E. Fournier, H. E. Horwood, R. Garon, J. C. Dorval, J. R. S. Sels, J. S. Fullerton and A. Jacob.



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- Not only distinguishes between 110, 220 etc. volts, but measures line voltage close enough to show up 3 or 4 volt drop between meter and load terminals on 110 v. line.

- No refrigeration serviceman need now be without definite knowledge of whether faulty operation of motors, magnetic valves, etc. is due to improper terminal voltage.

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ticket drawn during meeting to receive two-fifths of proceeds, two-fifths to be drawn as jackpot prize, determined by drawing of a capsule containing names of all members. If member is not in attendance or does not paid up, sum to be carried over to jackpot of following month. The remaining one-fifth is to go into an entertainment fund. Bob Kraak was the winner of the evening drawing. F. J. Carr was the winner of the jackpot but he was not there. Educational Chairman Yates then introduced Merle Haynes and Bob Kraak of Sporlan Valve Co. Mr. Kraak gave a very instructive talk with slides on the function and use of solenoid valves. He then turned the meeting over to Merle Haynes who gave a slide talk on Sporlan catch-all driers. Attendance totaled 20.

● **TOLEDO CHAPTER, Toledo, Ohio, Oct. 13**—New officers for the forthcoming year were nominated as follows: Victor P. VanVorce, President; Raymond A. Helminski, Vice-President; Donald E. Ormsby, Secretary-Treasurer; and William Hamm, Sergeant-at-Arms. Two movies, "Quality Controlled" and "Beautiful Ohio," were shown through the courtesy of Wolverine Tube Co. and enjoyed by the 20 in attendance.

After business was out of the way at the November 10th meeting, those present were invited to see the installation of new refrigeration equipment installed at a Kroger store. All agreed that it was very well installed.

● **TRENTON CHAPTER, Trenton, N. J., Nov. 17**—Roll call showed six officers, thirty-two members and several guests in attendance at this meeting. Walter J. Cherkos and John J. Mayer, Jr., were unanimously elected into the chapter. Other new members introduced were Joseph A. Barry, Charles Duane Hyer, George A. Kaufman and Israel Kramer. After the business meeting, Harry Jaeger, Chairman of the Program Committee, introduced the speaker of the evening, S. Charles Segal, Chief Engineer for the Kramer Trenton Co., and also Israel Kramer and Nathan Kramer. Mr. Segal stressed the seriousness of water being wasted and the problem that confronts the refrigeration industry in many cities due to inadequate supply of water and sewerage lines and plants to dispose of this water. He then proceeded to show how the evaporator condenser can cut this waste to a minimum. The manner in which the evaporator condenser operates was thoroughly explained with assistance of slides. Mr. Segal and Israel Kramer also explained with the use of slides how calculations to determine the size of condensers were made easy by tables prepared by their company.

● **TRI-COUNTY CHAPTER, Joliet, Ill., Oct. 16**—The educational feature of the evening was a talk by A. L. Sawyer of the Dole Refrigerating Co. With the use of slides, Mr. Sawyer explained the construction of Dole vacuum cold plates, how plates should be installed in home freezers and locker plants, and reducing refrigeration costs in dairy plants. Harold F. Ellis was elected to the Board of Directors for a period of two years, during the business meeting. Sergeant-at-Arms Ray Surges announced an attendance

of 16 members and 5 visitors. The 50/50 drawing was won by R. C. Marquis.

● **TWIN CITIES CHAPTER, St. Paul, Minn., Nov. 2**—President Wm. Hanson cut the business meeting short in order to allow more time for the educational program. Edward Asproth introduced Clarence L. Augrey, chief engineer of the Automatic Products Co. who gave a lengthy but highly instructional talk on Automatic Product valves with pictures starting with the automatic expansion valves and ending with the water control valves. A Dutch lunch was served later.

● **WAUSAU CHAPTER, Rhinelander, Wis., Nov. 4**—Paul Reed was on hand to install the following officers: Dick Plansky, President; Elmer Kuehl, 2nd Vice-President; Frank Malek, Treasurer; Jack Coates, Secretary; and David A. Stav, Sergeant-at-Arms. Al Horak, 1st Vice-President, was absent so will be installed at the next meeting. Following this, Paul Reed gave a talk on the heat pump and held an open discussion on the subject.

● **WESTERN MASSACHUSETTS CHAPTER, Springfield, Mass., Oct. 26**—This meeting was attended by 33 members who heard, on the educational program, an interesting talk covering Dayton belts and other products of the Dayton Rubber Mfg. Co., given by Stanley Gove, their representative.

● **WHALING CITY CHAPTER, New Bedford, Mass., Oct. 21**—The highlight of this meeting was a talk given by Mr. Alcott of Alco Valve Co., explaining the various valves manufactured by Alco. Mr. Alcott gave a demonstration with a glass evaporator equipped with the new pressure limit thermostatic expansion valve and with the liquid charge bulb snap action valve. Afterward, coffee and doughnuts were served to the 30 members present.

The guest speaker at the November 4th meeting was J. Roger Whitaker who showed films of Bikini and various attacks on Japan. These were Navy Department movies. A letter was read from John J. Madden, President of NESA, telling of the fire which destroyed the home of Charles Hughes and asking for aid.

On November 18th, the 30 in attendance heard a very good talk given by Mr. Almeida of Delco Motors of Boston, in which he told of the construction and purpose of various types of motors and answered many questions from the floor. The door prize—a Mini-Volt Tester—was won by J. Nolan.

● **WINNIPEG CHAPTER, Winnipeg, Man., Oct. 18**—At this meeting J. Alken of the Manitoba Apprentice Board spoke to the members of the chapter on subjects and problems related to the trade which has become newly recognized. He requested the assistance of the chapter in overcoming the many problems associated with the setting up of a new trade under the Apprenticeship Act. The following officers were then elected for the new year: H. Parker, President; F. Agnew, 1st Vice-President; A. Lye, 2nd Vice-President; F. Dowle, Secretary; C. Verity, Treasurer; and G. Stanger, Sergeant-at-Arms. Three directors—J. Steele, F. Whalley, E.



A

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● Made from heavy duty rayon reinforced neoprene hose. Exceptionally flexible and sturdy; will permit small radius bends. 36" lengths. Will withstand temperatures to -40 degrees F. and pressures in excess of 1000 lbs. per square inch. Low original cost and high refrigerant resistance means long time use and resulting economy.

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Oberholtzer, and Educational Chairman D. Casling completed the group to be elected.

• **YOSEMITE CHAPTER, Modesto, Calif., Oct. 20**—The guest speaker was Mr. Beyer of the Bussman Manufacturing Co. who gave a most interesting talk and demonstration on fusetrons. Dewey Stines introduced Lloyd Thomas, State President, who gave the chapter many helpful hints on conducting their meetings. Othel Robbins won the cash prize and also a gauge and manifold set that was raffled off. Coffee and doughnuts were served after adjournment.

Golden Gate Auxiliary Receives Charter

M. B. WILLIS, President of the Golden Gate Chapter, called a special meeting of the chapter on October 26th for the purpose of presenting the charter to the Ladies Auxiliary. Dave Fagg, a member of the California State Board of Directors, presented the charter to the Auxiliary President Mrs. Dolores Larsen, and installed the officers. The members then received their official membership cards from President Willis. After the ceremonies, a ladies robe was raffled off—the lucky winner being Mrs. Anita Carney. Other tickets were drawn for various novelty prizes. Refreshments consisted of lemon and pumpkin pies, coffee, doughnuts, soft drinks and beer. The party lasted until midnight and everyone enjoyed themselves very much.

Ladies Auxiliary

• **CANTON CARDINAL AUXILIARY, Canton, Ohio, Nov.**—Election of officers resulted in the following: Mrs. Othella Finney, President; Mrs. Sylvia Weisbrod, Vice-President; Mrs. Maureen Bratte, Secretary-Treasurer; and Mrs. Faith MacBeth, Sergeant-at-Arms. Board of Directors—Mrs. Chrystal Snyder (Chairman), Mrs. Ethel Zimmerman and Mrs. Margaret Frantz.

• **MONTEREY COUNTY AUXILIARY, Monterey Co., Calif., Nov. 10**—After the business meeting closed, an auction was held, with Mrs. Harruff as auctioneer. The bidding was lively and the returns were generous. Another will be held later on. Refreshments were served.

• **OIL CAPITAL AUXILIARY, Tulsa, Okla., Nov. 14**—All business was postponed so that election of officers could be held. They are

as follows: Lucille Weaver, President; Kathleen Caday, 1st Vice-President; Maxine Baker, 2nd Vice-President; Vera Brannon, Secretary; Mildred Wight, Treasurer; and Ruth Palmer, Sergeant-at-Arms. Board of Directors—Ruth Hacker, Virginia Cochran, Laura Churchwell, LaGrace Benigar and Elsie Hanna.

• **ROCHESTER AUXILIARY, Rochester, N. Y., Nov. 10**—A discussion was held on the forthcoming Christmas party and a motion was made and carried that the Auxiliary take care of a needy family for Christmas. Each member will bring food to the next meeting to fill a basket.

• **SCIOTO AUXILIARY, Marion, Ohio, Nov. 11**—Mrs. Viola Osmun was hostess to the Auxiliary at this meeting. A Christmas exchange meeting was announced at which Mrs. Mildred Davids will be hostess. Prizes in games and contests went to Mrs. Croushore and Mrs. Knachel. Refreshments were served.

• **WICHITA AUXILIARY, Wichita, Kans., Nov. 9**—This was a dinner meeting with 13 members present as well as several guests. The following officers were nominated: Edna Hawkins, President; Katherine Knox, Vice-President; Opal Hall, Secretary; Gladys Shannon, Treasurer; and Peggy Muck, Sergeant-at-Arms.

Virginia Auxiliary Becomes Active Organization

SINCE the presentation of their charter last February, the Ladies Auxiliary of Virginia Chapter is now a highly active organization. Not only have the ladies been active in social affairs, but each member has taken a special interest in the administrative work of their husbands' business, all of whom are refrigeration engineers, contractors and dealers.

A party was recently sponsored by the ladies for all of the members and friends of the Virginia Chapter at the "Eldwood Boat Club." Refreshments were served in a most elaborate fashion, during the time of entertainment.

The officers of the Auxiliary include Mrs. B. A. Hauck, President; Mrs. Grace Featherston, Vice-President; Mrs. Russell Morgan, Corresponding Secretary; Mrs. Myrtle Booth, Treasurer; Mrs. Rose Seay, Recording Secretary; and Mrs. Ralph W. Lampie, Publicity Chairman.

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These instruments take the guesswork out of trouble-shooting on any type of refrigeration equipment. With them you can automatically chart a written record of the true performance of the equipment you are servicing in the home, store, or cold storage plant. Such charts, taken before and after the job, are good proof of work well done.

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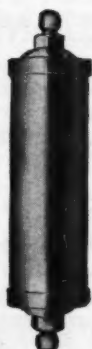
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“ NEWS OF THE ” EQUIPMENT INDUSTRY

“Freon 11” Price Reduced

KINETIC CHEMICALS, INC., announced recently a reduction in prices for “Freon 11” fluorinated refrigerant ranging from nearly two per cent to a little less than five per cent, depending upon container sizes.

The new prices became effective on shipments made on or after November 26.

Owing to wider use of “Freon 11” by the refrigeration, air-conditioning, and other industries, the company said, it has been found possible to pass on the benefits of operating economies resulting from increased production.

“Freon 11” is used principally in industrial refrigerating equipment, in central-station air-conditioning systems and as the propellant for insecticides in aerosol bombs.

★ ★ ★

Ranco President Honored by O. S. U. Research Foundation

E. C. RANEY, President of Ranco, Inc., was elected to the Executive Committee of the Ohio State University Research Foundation when the Foundation's Board of Directors held its annual meeting at Ohio State University recently.

Mr. Raney has served on the Foundation since March, 1948, when he was appointed an Alumni Member.

Since its organization over 12 years ago the Research Foundation has maintained a strong, active program of co-



E. C. RANEY

operation with other agencies, either industrial or governmental, in researches of value to both the University and the sponsoring organization for the discovery or application of basic information for the further development of industry and the improvement of this country's welfare. During the past year, 50 industrial and 70 government contracts were administered. The latter group included cooperation chiefly with the Air Materiel Command and the Navy.

Mr. Raney, whose company for many years has been the world's largest manufacturer of refrigeration controls, received his degree in mechanical and electrical engineering from Ohio State in 1912. He developed the refrigeration and automobile heater controls which his company now manufactures, as well as the automatic reclosing circuit breaker which it previously produced.

★ ★ ★

Larger New York Offices for Virginia Smelting Co.

THE New York offices of the Virginia Smelting Company moved December 1 from 76 Beaver street to new, larger and more centrally located quarters at 270 Madison avenue, suite 1201. Announcement was made by W. F. Luckenbach, Jr., the firm's manager of industrial sales. Home offices of the company are in West Norfolk, Virginia.

★ ★ ★

G. E. Opens \$3,000,000 Motor Plant at San Jose, Cal.

A \$3,000,000 motor manufacturing plant, which at peak production will be able to turn out more than 1,500 electric motors weekly, was officially opened by the General Electric Company at San Jose, Calif., November 18.

The San Jose factory, situated on a 57-acre tract which allows for multiple expansion of the present building, ulti-

maco

SNAP-ON COPPER TUBE CLIPS

FIT SNUG - HOLD TIGHT - while both hands are free to work



VAN type HANGERS
Use for extra neat installation — made of all copper for tube sizes $\frac{1}{4}$ ", $\frac{3}{8}$ " & $\frac{1}{2}$ " O.D. and pipe sizes $\frac{3}{8}$ ", $\frac{1}{2}$ " & $\frac{3}{4}$ "

STRAP HANGERS
Made of $\frac{1}{4}$ " brass strip — Adjustable for all sizes of tubing or pipe, $\frac{1}{4}$ " O.D. and up.

BRASS STAPLES
Handy for a score of uses, especially for radiant heat installations.

A MACO exclusive in new-design tube straps that "snap" on and hold by themselves, leaving both hands free. Available for $\frac{1}{4}$ " thru $2\frac{3}{4}$ " O. D. tube sizes.

These and other MACO products are available through leading wholesalers, everywhere. Literature and prices available upon request.

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GENERAL CONTROLS' new selective capacity cartridge provides instant sizing adjustment. tremendous savings in inventory investment, stock space and handling costs.

THE NEW SELECTIVE CAPACITY CARTRIDGE PROVIDES INSTANT SIZING ADJUSTMENT

COMPARE THESE FACTS

ORDINARY VALVES

Separate valves for each back pressure or suction temperature range. Separate valves for each capacity size.

GENERAL CONTROLS V-200 VALVES

One valve for ALL back pressure or suction temperature ranges. One valve with selective cartridge for full range of capacities.

V-200 Thermal Expansion Valves available in $\frac{1}{2}$ ", 1", 2", and 3" body sizes and for Freon, Methyl Chloride, Sulfur Dioxide.

For Full Capacity Range in each body size at all back pressures with any one refrigerant.

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mately will produce all of the company's output of single-phase capacitor integral motors—a multi-million dollar business, according to H. V. Erben, G-E vice president and general manager of the company's Apparatus Department.

One of the largest and most modern industrial plants in Central California, the 144,000 square-foot factory already is producing electric motors, ranging from 1 to 500 hp, at the rate of several hundred weekly. At peak production, expected to be reached early next year, the plant will turn out more than 1,500 motors weekly. These will include single-phase integral horsepower motors designed for operation on 115- or 230-volt circuits and widely used in home, farm, and industrial applications. The 5- to 500-hp polyphase motors are designed for irrigation pumps and are widely used in the California area.

Approximately 100 per cent of the plant's polyphase motor production will be for the western market, while about 90 per cent of the small motors—those for use in air compressor equipment, home freezers, home work shops, farm machines, etc.—will be produced for the company's national and international markets.

* * *

Improved Thermo-King Truck Unit

U. S. THERMO now is mass-producing a super-capacity version of the Thermo-King, designated Model R. Several months of road-test reports, based on actual commercial operating conditions in virtually all parts of the country, now make it possible for Thermo-equipped truck lines to make some bold new claims to shippers of perishables — and to back up those claims.

Most significant advance attained by Thermo in its new model is the elimination of four important cost-factors—factors which hitherto have been essential parts of the pre-cooling process.

Shipments of fruit, berries or vegetable produce normally have been moved from grove or field to truck, to warehouse (for pre-cooling), and thence back into trucks for delivery to market. By virtue of the swiftness of its cooling power, Model R eliminates these costly

and time-consuming steps. The produce may be loaded directly into Thermo-cooled trucks, quickly brought to desired temperature, and instantly started on their way to market. Hauling to warehouse, unloading, pre-cooling time, and reloading are thus completely bypassed.

Though it's a more potent unit than any of its predecessors, the Model R at 900 pounds represents a considerable reduction in weight. This reduction has been achieved by Thermo's experimental laboratories chiefly through use of aluminum. Greater potential pay load is the result.

Model R is an all-purpose mechanism, in that it doesn't "specialize" within a limited temperature range. Field reports show it to be equally efficient all the way from the "mildly cool" range down to the "extremely cold" levels. And when outside thermometer readings drop to 20 or 30 degrees below zero, as they will in the northern tiers of states this winter, Model R functions as a heater, keeping cargo temperature at exactly the desired point.

Operation is toy-simple. The driver, or dispatching official simply turns the Thermo-King temperature dial to the required figure, and throws the starter switch. That is all. Thenceforth the operation is fully automatic.

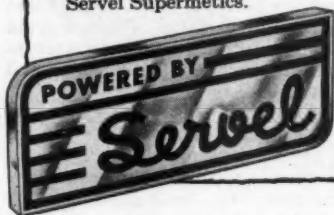
Commercial runs under rugged road conditions have seen Model R performance stand up under unexpected hardships. A truck driver for a New York concern was proceeding down the highway when his trailer became unhitched from the tractor and nosed into a ditch. It remained resting on its front end for 10 hours under a broiling sun. When the trailer was righted and rehit to the tractor, examination of its contents—all frozen foods—showed that Model R had maintained zero temperature and there was absolutely no spoilage.

Model R is powered by its own gasoline engine and is independent of the tractor. Another highlight is U. S. Thermo's starter-generator mounted on the engine crankshaft; this guarantees smoother starting and positive generating. Further, it eliminates the need for flywheel, starter drive, separate starter and separate generator.

Both the engine and the six-cylinder compressor may be readily serviced

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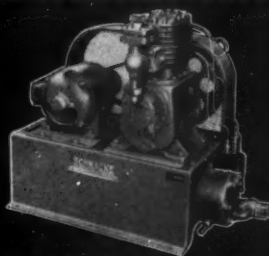
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Presents everything needed by the man who wishes to service electric refrigerators, from a simple explanation of how refrigerators work, to detailed practical methods and data on installation, testing, servicing, and adjusting, trouble-shooting, repairing, etc. It gives descriptions and illustrations of many popular makes of machines, showing both the entire systems and details of parts. It emphasizes the basic points of construction and operation so that the reader can handle practically any type of machine.

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ACME INDUSTRIES HOLDS ANNUAL SALES CONFERENCE



The Third Annual Sales Conference was held at Acme Industries, Inc., Jackson, Michigan, October 21-23. These conferences were begun in 1942, discontinued throughout the war years, and resumed last year. A large percentage of Acme's representatives and field agents from all parts of the nation gathered in Jackson to view the new products and equipment and to study the new features that have been added. Pictured here are top row, left to right: Ward Swarthout, P. G. Williams, D. G. Merrill and G. D. Baldwin. Lower row, left to right: Fritz Oertel, J. T. Maloney, G. L. Baldwin and E. B. Dunphy.

★ ★ ★

E.R.M.A. Plans Program

THE first meeting of the new season of the Eastern Refrigerator Manufacturers' Ass'n., Inc., of the City of New York, was held at the Hotel Commodore, on October 27. Members are in the business of manufacturing walk-in refrigerators, and all other allied fixtures for butchers, delicatessens, etc.

Albert Davis, President of the Association, announced that the board of directors appointed Schneider & Edelstein, as General Counsel of the association, and Nathan Edelstein of the Counsel's office was elected executive vice-president of the association. Nathan Edelstein is also the executive vice-president of the Refrigeration & Air-Conditioning Guild, Inc., of New York, and the recording Secretary of the National Association of Refrigeration Contractors. He brings with him a wealth of experience in the refrigeration industry.

The program of the association for the

year 1948-49 was presented to the members of the association, approved by them. The program consisting of 9 items will be to:

1. Compile statistics of costs of operation of refrigerator manufacturers, so that he (the manufacturer) will know exactly how to evaluate his services and thereby be able to ascertain the real cost of operation.
2. To demonstrate proper business practices.
3. To set up a modern, practical code of ethics.
4. To provide better public relations and bring to the attention of the buying public that refrigeration manufacturers and fixture men are doing a good job for the community.
5. To draw up standard business forms and to suggest proper books and records for the use of the members.
6. To cooperate with the Federal Trade Commission in promulgating fair trade rules and regulations.
7. To provide the members with current laws, rules and regulations and interpretations and opinions of the various courts and government agencies.
8. To create a close and friendly relationship amongst the manufacturers.
9. To provide for a better understanding between labor and management.

A concerted membership drive is to be instituted immediately, one that would stem from the activity of each and every present member of the association. Each such member will contract a few of his competitors and propose them for membership. The goal of the membership drive is to triple the present membership.

The officers of the organization are, Albert David, President; Barney Berch of The Schultz Co., 1st Vice-President; Nathan Edelstein, Executive Vice-President; Julius Anolick of I. Anolick & Son, Secretary-Treasurer.

The board of directors consist of: Milton Schwartz, Abraham Schreckinger, Joe Collonese, Leo Katz and John Poth.

★ ★ ★

Lovelock Opens Branch

DECEMBER 10th marked the opening of the Melbourne, Australia, branch of F. C. Lovelock Pty. Limited in Sydney. Industry members were invited.

Do You Recognize This Fellow?



Don't look now because he would be embarrassed if caught pictured as an educator. He is your REWA Wholesaler and is really no more than another hard working businessman, but he does take a major interest in the educational activities of your industry.

As a member of REWA, he has agreed to operate his business for your benefit on an—

Approved Business Policy

1. To cooperate with all trade groups in promoting educational activities for industry improvement.
2. Acquaint the trade promptly with information on new products, price changes and other matters of importance to the industry.
3. Distribute direct mailing pieces, catalogs and other materials, to the trade when they are supplied for this purpose by the manufacturer.
4. Cooperate with manufacturers in educational activities designed to better acquaint both employees and customers with the features incorporated in all products sold.

In many communities your wholesaler is the sponsor of special educational meetings and displays.

He profits as you profit. He is interested in your business and educational advancement. He cooperates with other industry associations in furthering your individual interests. Yes—he wants to keep up-to-date himself and wants to help you keep pace with your industry.

Over 180 wholesaler members of REWA with 300 branches across the country are ready to serve you with their facilities and invite you to consider them your buying headquarters.



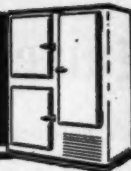
Refrigeration Equipment Wholesalers Ass'n.

Association Headquarters

920 East McMillan St.

Cincinnati 6, Ohio

NEW IMPROVED

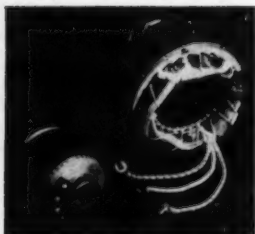


AND EQUIPMENT

Information in this department is furnished by the manufacturer of the article described and is not to be construed as the opinion of the Editor.

G. E. Motor

A NEW small-diameter motor designed to drive hermetically sealed refrigeration compressors has been announced by General Electric's Fractional Horsepower Motor Divisions.



With a diameter of 4.790-4.792 inches, it is available in ratings up to $\frac{1}{8}$ hp, 1725 rpm, 115 volts, 60 cycles. The motor can be furnished with a rotor having a counter-bored quill or with punchings made to fit directly over the shaft.

Compactly designed, the new motor was developed to aid compressor manufacturers in adjusting the size of their units to fit refrigerator space limitations.

Extinguisher

A HANDY dry chemical fire extinguisher containing two pounds of Ansul Plus-Fifty Dry Chemical has been designed for effective use by inexperienced operators. In the small extinguisher field, the Ansul "Emergency Fireman" is said to provide maximum protection for flammable liquid and electrical fires. It is rechargeable on the spot after use.

The dry chemical in the "Emergency Fireman" is non-toxic, a non-conductor

of electricity, non-corrosive and non-abrasive. It will not deteriorate, solidify or evaporate and therefore does not require periodic recharging.



The fill cap on the "Emergency Fireman" is built into the mounting bracket. This makes the extinguisher ready for instant use the moment it is removed from the mounting bracket.

Manufacturer: Ansul Chemical Company, Fire Extinguisher Division, Marinette, Wis.

Driver

FASTENING pipe hangars to concrete or metal always has been a tedious job. It generally means star drilling, inserting toggle or anchor bolts and other time-consuming efforts.

One recently developed remedy for this problem is a powder-actuated driver that

will "pin" a pipe hangar to a concrete ceiling or wall, steel I-beam or column, in a few seconds. It also fastens wood to concrete or steel.

The small, portable tool, manufactured by Mine Safety Appliance Co., embeds studs in steel or masonry by the discharge of a blank cartridge. Once embedded, the studs have tremendous holding power — up to several thousands of pounds.

Two diameters of studs— $\frac{3}{8}$ -in. and $\frac{1}{2}$ -in.—may be used by interchanging the barrels of the tool. There are several varieties of studs available—externally or internally threaded or plain, headed types.



Operation of the five-pound tool is simple. The stud, with the cartridge attached to it, is inserted in the barrel. The operator then rotates a spring-loaded safety arm 180 degrees to move the firing pin into position for contacting the cartridge primer. Holding the barrel against the material to be penetrated, the tool is pushed forward sharply to discharge the stud.

Mine Safety Appliances Co. officials say that every con-

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Here's the quick easy answer to keeping your stocks complete . . . just call on us for any and all Refrigeration, Air Conditioning, Heating Parts and Supplies! Save your precious working time, your energy. Thousands of satisfied customers testify to our speedy careful attention to orders. Today . . . request our new catalog No. 48 on your etterhead!

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LET DIS-SOLVO DO THE WORK

THE MIRACLE SOLVENT

For REFRIGERATION SERVICE MEN

DIS-SOLVO An amazing chemical discovery!

- Removes encrusted deposits, sludges, etc. with amazing speed.
- Cleans valve plates, eliminates 75% of time used to lap the plate.
- Removes crust and scale often found in burnt out or stuck up sealed units.

SUPERIOR PROPERTIES

\$1.95 Non-inflammable, Non-acid, Non-toxic, Non-injurious, penetrates through oil. Will not attack metal, harmless to the skin. Economical —can be used over and over again.
pound
Makes
4 gallons

If your jobber can't supply you, send us his name and address. Also send check or money order and we will ship prepaid. For further information write:

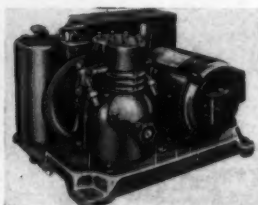
L. Y. DISTRIBUTING CO.
BOX 14, BROOKLYN 20, NEW YORK



ceivable precaution is "built in" the tool to minimize hazards. Possibility of accidental discharge is negligible because the firing pin cannot reach the cartridge primer until the safety arm is rotated. If the tool is dropped accidentally, the safety arm instantly moves the firing pin out of position. It is virtually impossible for the stud to ricochet because the stud remains fastened to the cartridge with a piston-like attachment until the instant of penetration. Moreover, there is little space between the barrel opening and the stud.

Compressor

DESIGNED for use in self-contained applications where small mounting and overall dimensions are essential, the new Lehigh $\frac{1}{2}$



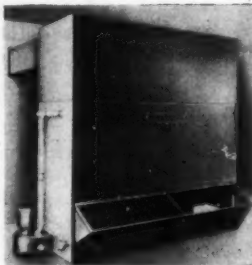
hp. air-cooled unit makes the third package type unit to be introduced by Lehigh Manufacturing Co. This new Blu-Cold unit is only 12 $\frac{1}{2}$ " high by 18 $\frac{3}{4}$ " long and is ideal for many types of self-contained commercial refrigerators. Capacity ratings, made under strict ASRE code regulations, are from 1450 Btu. at minus 25 F. to 6100 Btu. at plus 45 F.

In common with all groups of Lehigh Blu-Cold condensing units, the new $\frac{1}{2}$ hp. packaged unit features complete interchangeability of parts with Lehigh $\frac{1}{4}$ and $\frac{3}{8}$ hp. units.

The addition of this unit to the Lehigh line brings the selection of Lehigh models over the 150 mark including heavy duty air cooled $\frac{1}{2}$ h.p. through 2 h.p. — standard duty air cooled $\frac{1}{2}$ hp. to $\frac{3}{4}$ hp. — heavy duty water cooled $\frac{1}{2}$ hp. through 5 hp. and combination air and water cooled $\frac{1}{2}$ hp. through 2 hp.

Condenser

EIGHT new evaporative condensers, which use both air and a water spray to cool hot refrigerant vapor and change it into a liquid during the normal course of a refrigeration or air conditioning cycle, have been announced by Frigidaire Division of General Motors. These new models differ



from ordinary condensers in that they operate as separate, remotely installed units, and are used with matched evaporative-type compressors which are built without condensers.

All of the new condensers, with the exception of the small two-ton capacity model, are comprised of three parts, including fan, coil and base sections. The fan section is located at the top and may be arranged for front, rear or vertical discharge, depending upon requirements. The coil, constructed of either steel or copper, is below the fan. The base section is constructed of heavy welded steel with rust-resistant finish. Located at the top of the base section is the air intake grille. The receiver is also located in this section, surrounded by sump water, and has inlet and outlet shut-off valves so that the system can be pumped-down without losing refrigerant.

The two-ton condenser, smallest in the new line, has a welded-steel casing with a rust-resisting finish. It is equipped with a two-inch lip for optional installation of a short duct. The coil is copper tubing with brass fins. Two removable brass nozzles provide a fine mist-spray, automatically controlled by an adjustable valve. In addition, this condenser may be converted into an air-cooled

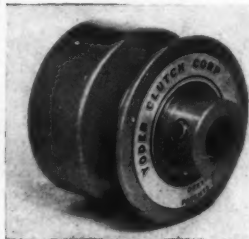
unit for cool weather operation. It may be installed in or near a window—or outside if protected. Multiple installation is possible when additional capacity is required.

All coils used in the new line are of the primary surface-type and are easy to service and clean. For example, front, inner and outer protective panels of the coil section can be removed to reach spray nozzles and the coil, itself. Blowers are die-formed and equipped with multi-bladed fans. A jack-screw attachment on motor mountings permits simple belt adjustment.

An open-impeller, vertical-type water pump, completely submerged in water, is employed. The impeller is mounted on an extended ball-bearing motor shaft. The motor is a one-fourth horsepower unit on 10, 15, 20 and 25 ton units and one-half horsepower from 30 tons on up. Spray nozzles are constructed of bronze and are of the low-pressure hollow cone type.

Clutch

YODER Clutch Corporation, Orrville, Ohio, announces a new compact type of automatic centrifugal clutch—2 $\frac{1}{4}$ " outside diameter by 1 $\frac{1}{2}$ " overall length including a standard 2" V Belt sheave. Adaptable to all standard fractional horse-power elec-



trical or internal combustion units. This reversible unit is readily applied to any assembly where high starting torque characteristics are desired, such as air compressors, pumps or household appliances. Engagement is predetermined in relation to application. Can be used on original equipment or as a replacement.



\$50.00 FOR A NAME

We're stumped — We need your help!

All you have to do is suggest a name for our new monthly publication to be distributed for the first time in December. With the suggested name, include a letter of 25 words or less telling us why you feel the name submitted is most appropriate.

These hints may help you select a winner: Our new miniature publication, especially prepared for Contractors and Servicemen, will be filled with helpful information, technical data, price quotations and timely wit. It will be distributed without charge to all who request it.

Publication of this informative little monthly will mark the advent of our 20th year in the industry It's our birthday gift to those who helped build our organization.

CONTEST RULES

All Contractors and Servicemen eligible. Contest closes midnight, January 15, 1948. All entries should be mailed to Chase Refrigeration Supply Company.

In case of ties, duplicate prizes will be awarded. The decision of the Judges is final and no entries will be returned.

CHASE refrigeration supply co. NOT INC.

546 WEST 119TH ST., CHICAGO 28, ILL. — Phone PULman 5125



1374 NOTRE DAME W.
MONTREAL

. . . thanks each of you for your loyal patronage and excellent cooperation in the past. We are proud to extend our . . .

**Season's Greetings
and Best Wishes
to**

all of you, our new and old friends
in the refrigeration industry.

**A
Merry Christmas
and a
Happy New Year**

All the joys and pleasures of the Holiday Season are combined in our sincere wish of a Merry Christmas and a most happy, successful New Year to our many friends in the refrigeration industry.

FRED C. KRAMER COMPANY

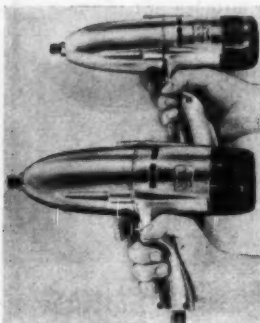
128-138 S. Paulina St.,
Chicago, Illinois

Impact Tool

A NEW and heavier model of the all-purpose electric impact tool is now announced by Ingersoll-Rand for maintenance and light production work in the air conditioning and refrigeration fields.

The new model will perform all the operations of its prototype, with extended capacity. With standard accessories it will run and remove nuts up to $\frac{3}{8}$ " thread size; drive and remove studs; extract broken cap screws and studs; apply and remove machine screws of all kinds; run wire brushes; drill brick, metal, and masonry; tap; and ream. It may also be used for woodboring.

Known as the 8U, the new



model has all the features and advantages that have made the 4U model so useful for light maintenance and production work. The reversible motor makes it as easy to remove screws, studs, and nuts as to apply them; the motor never burns out—even if the spindle stalls; the impact principle operates whenever resistance is met and provides extra power to push through the job. Virtually no torque reaction is transmitted back to the operator.

The new tool is 12 $\frac{1}{2}$ inches in length and weighs 9 lbs., 13 oz. It is available for either 110 or 220 volt current and operates on AC or DC.

For further information write to Ingersoll-Rand Company, 11 Broadway, New York, or any of its branch offices and distributors.

TRADE LITERATURE

Airo Catalog

AIRO Supply Company's new Fall catalog 48-B is noteworthy for its simplified arrangement and classification of merchandise. It is designed to save time in ordering. Merchandise is grouped by lines. Similar lines are placed close together so you can compare them easily and quickly. Pictures are clear and distinct. Descriptions are brief but complete.

Of special interest in this catalog are two pages of simplified refrigeration tables to help the engineer figure cooler and sharp-freezing estimates. Another outstanding addition consists of five pages of Universal Cooler Condensing Units, including hermetics, and parts.

Copies of the catalog may be obtained by writing to Airo Supply Company, 2732 N. Ashland Avenue, Chicago 14, Illinois.

★ ★ ★

Free Engineering Data Booklet

BETZ Corporation, Hammond, Indiana announces the publication of a condensed engineering data booklet to aid both salesmen and service contractors in figuring heat loads. The text is brief and intended for use by those who already understand the principles of modern refrigeration. Subject matter is confined to figuring all heat

loads and the proper applications of force convection units.

Included are selector tables giving calculated heat loads at specified conditions for stock size walk-in coolers, reach-in refrigerators and dry beverage boxes. Available free, upon request, to all interested persons in the refrigeration industry. For copies of the "Filterpure Engineer" write Betz Corporation, Hammond, Indiana.

★ ★ ★

Coin Coolers

AN interesting three-color Brochure 203-4 introduces the new "65" Coin Cooler for bottled beverages manufactured by Mills Industries, Incorporated, Chicago. Some of the features illustrated and described are greater compactness, automatic coin changer, 65 bottle vendor and special pre-cooling arrangement. A complete listing of mechanical and construction details is also included.

★ ★ ★

New Coldspot Catalog

SOMETHING new and different is issued in a new catalog by the Precision-Built Tool & Parts Company, 4530 Gravois Avenue, St. Louis 16, Mo. One of the largest of its kind, the catalog con-

REFRIGERATION AND AIR CONDITIONING
UNITS • PARTS • TOOLS • SUPPLIES

Five Pages of
UNIVERSAL COOLER
Units and Parts



NEW AND DIFFERENT!

Designed to save YOUR buying time. More popular lines—conveniently grouped and displayed—clearly indexed. Latest prices. Get your copy and see the difference.

WHOLESALE ONLY—PLEASE WRITE ON YOUR LETTERHEAD

AIRO SUPPLY CO. 2732 N. ASHLAND
CHICAGO 14, ILL.

New Catalog!



The brand spanking new RSI catalog . . . complete with new parts, prices and helps. It's easy and convenient to order from RSI.

Free to Western States
Refrigeration trade — Use your letterhead, please.

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West Coast Wholesaler since 1928
3109 Beverly Blvd., Los Angeles 4, EX. 3111

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YODER REFRIGERATION
PLATES

Size	Net Each F.O.B. St. Paul
19 x 48"	\$6.00
19 x 54"	6.50
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22 x 60"	8.00
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Be Smart! Get the New No. 148
Fall and Winter **DEPENDABOOK!**

HARRY ALTER'S
REFRIGERATION PARTS CATALOG

A catalog issued to and for the trade only... Write—NOW—on your letterhead, for your copy of the most nearly complete refrigeration-parts-and-supplies catalog in the business—the new DEPENDABOOK!



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174 Lafayette St., New York 13, N. Y.

WHOLESALE ONLY

tains a complete list of Coldspot compressor parts, a list of specifically designed tools for use on the Coldspot compressor, all illustrated, described and priced. This catalog also contains information and detailed instructions

on the repairing and rebuilding of the Coldspot compressor, as well as other valuable information. This catalog should prove to be an asset to the serviceman as well as the jobber. Copy sent free upon request.

sales promotion, product planning, commercial engineering.

★ ★ ★

Alco Appointments

THE Alco Valve Company, St. Louis manufacturers of refrigerant control valves, announces the appointment of two field engineers in the general Ohio-Michigan area.

John H. Marling has been assigned to cover Ohio, West Virginia and western Pennsylvania, with headquarters at 241 Castlewood Avenue, Dayton.



J. H. MARLING

Mr. Marling, who joined Alco after two years as field and application engineer with Chrysler Airtemp, received his degree in mechanical engineering at Purdue University. He is a member of the American Society of Refrigerating Engineers and the Engineers' Club of Dayton, and holds the rank of lieutenant (j.g.) in the U. S. Naval Reserve.

Robert W. Carvell, now representing Alco in Michigan, Northwestern Ohio and northeastern Indiana, is a "graduate" of the company's own Engineer-

PERSONNEL NOTES

Siddall With Simons Company

JOSEPH SIMONS Company of Hartford, Conn. announce an addition to their sales engineering force with the acquisition of W. F.



W. F. SIDDALL

(Walt) Siddall. He has served in the refrigeration supplies field for a great many years and enjoys a wide acquaintanceship in the field.

★ ★ ★

Donley, Manager of G. E. Marketing

HAROLD B. DONLEY has been appointed manager of marketing of the General Electric Company's air conditioning department with headquarters at Bloomfield,

N. J., according to an announcement by Harold F. Smiddy, general manager.

Mr. Donley has recently been vice president and general manager of Hunter Fan and Ventilating Company of Memphis, Tennessee. Earlier he was general appliance sales manager of Westinghouse Electric Supply Company at New York.

In his new appointment, which became effective November 1, Mr. Donley will be responsible for direction of sales and merchandising activities of General Electric's air



H. B. DONLEY

conditioning department. Among the activities falling under his jurisdiction will be product and market sales, the field sales organization, market research, advertising and

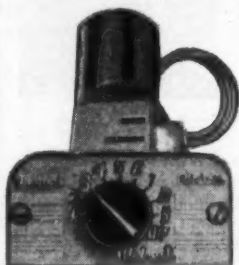
We, all of us, at Chase Refrigeration Supply Company pause at the conclusion of a big and busy year to wish you, all of you, Sincere Good Wishes for a MERRY CHRISTMAS and a HAPPY PROSPEROUS NEW YEAR.

CHASE REFRIGERATION SUPPLY CO.

546-48 W. 119th Street



Chicago 28, Illinois



CUTLER-HAMMER COLD CONTROLS

Domestic Type — Stainless Steel Control — 125 V. Max.

C-H model No. 9521 is a perfect replacement for about 90% of controls on domestic refrigeration. Control with front plate and knob. Easily adjusted to all ranges. Prong connections on back. Face plate screw holes 2-13/16" centers. Controls are Underwriter's Approved.

1/2 HP A.C. 110-220 Volts—1/4 HP D.C. 115-230 Volts with magnet RANGE SETTING 12° CUT-OUT TO 28° CUT-IN. DEFROST AT 44° . . . STANDARD MOUNTING HOLES. POWER ELEMENT 2 1/2" LONG. PRONG TYPE TERMINALS.

No. R-1788

Complete with Front Plate

Lots of 10, each \$3.75

Lots of 25, each 3.60

\$3.95

Lots of 50, each 3.55

Lots of 100, each 3.25

LIGHT SOCKET

Snaps on back of above controls. Fits standard size bulbs. Black bakelite socket.

No. 8035—Each.....7c

G&E EQUIPMENT SUPPLY CO.

OGDEN AT FULTON

Catalog Sent Upon Request

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Haymarket 1-0240

GOOD FORTUNE — — GOOD HEALTH AND MUCH HAPPINESS!

Is our sincere wish to the many friends in the refrigeration industry whose business relationship has been one of our real joys throughout the year.

H. W. BLYTHE CO.

529 Milwaukee Ave.



Chicago 22, Ill.

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To come in and look over our new place of business.

Plenty of parking space.

Large display floor showing the latest refrigeration equipment.

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Complete Stocks of best brands for immediate delivery.

Trade where you get the benefit of large inventories, wide varieties and service from men who know your requirements.

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WHOLESALE

Automatic
HEATING &
COOLING SUPPLY
DIVISION OF WILCOX-CHANCE

647 W. LAKE ST., CHICAGO 6, ILL.

ing Department. He attended Colorado School of Mines and Washington University in St. Louis. He was with the Curtiss-Wright Corp. early in the war, and later spent two and a half years with the U. S. Army Air Force in the Pacific campaign.



R. W. CARVELL

Mr. Carvell is a member of the American Society of Refrigerating Engineers and of the Air Force Association.

★ ★ ★

Sporlan Valve Promotions

BECAUSE of steadily expanding operations, the Sporlan Valve Company has made several important changes in its organization. The executive positions of Controller and Director of Customer Relations have been created. This will enable top management to spend more time in over-all planning and supervision. Because of his many years of service with the company, and his thorough knowledge of all phases of the business, Mr. William T. Carmody has been appointed Controller and Director of Customer Relations. Mr. Carmody started with the

company when it was founded 15 years ago. Most of his activities in recent years have been in sales work and for the past several years he has been Sales Manager.



W. T. CARMODY

Management of sales will now be in the hands of Mr. Charles C. Grote, who becomes Eastern Sales Manager with head-



C. C. GROTE

quarters in Mt. Vernon, New York, and Mr. Merle G. Haynes, Western Sales Manager with headquarters in St. Louis, Missouri. Supervision of all sales, including export, will be handled by these two men working with the company's staff of ten field sales-engineers. Both men have been with the company for many years, both are graduate engineers with extensive sales

experience. Mr. Grote has been Manager of the company's eastern office for ten years and his responsibility has been expanded to cover the entire



M. G. HAYNES

eastern half of the country. Mr. Haynes has been field sales-engineer on the West Coast for nearly 8 years.

To fill the vacancy on the West Coast, created by the promotion of Mr. Haynes to Western Sales Manager, Sporlan Valve



W. H. KRACK

Company is happy to announce the appointment of Mr. W. H. Krack. Mr. Krack has spent over 10 years in the refrigeration industry in both a technical and sales capacity. He will make his headquarters in Los Angeles. His territory includes California, Oregon, Washing-

NOW! For Quicker, Easier Servicing on Coldspot Jobs . . .

**Guaranteed
Ready-To-Install**

REBUILT COLDSPOT COMPRESSORS



Exch. Price All models

\$16⁵⁰

F.O.B. St. Louis, Mo.
Complete as illustrated

HERE'S ALL YOU HAVE TO DO: Ship pump to be exchanged directly to us, freight prepaid, together with check, or money order, for \$16.50, or order C.O.D. Be sure to state Horsepower when ordering. (1/6, 1/5 or 1/4 H.P.) We will supply any size needed regardless of size pump sent in for exchange. (Check motor H.P. if in doubt).

**LARGE STOCK ALL
MODELS—REPLACEMENTS SHIPPED SAME
DAY RECEIVED.**

Replacements guaranteed for 1 year on pro-rata basis against material and workmanship defects.

IMPORTANT

Exchange compressor must be received before replacement is forwarded. Missing, damaged, or cracked parts will be charged extra to you.

Compressor by Railway Express or Parcel Post to save time. All replacements are shipped freight collect.

**JOBBER INQUIRIES
INVITED!**

BEIL & CO.

501 S. FILMORE, ST. LOUIS 22, MO.

REBUILDING SPECIALISTS

A rebuilding service planned to suit your requirements.

Don't waste your service and installation time by reconditioning parts—send them to us; we specialize in rebuilding—

**THERMOSTATIC EXPANSION
VALVES
AUTOMATIC EXPANSION VALVES
COLD CONTROLS
WATER VALVES
COMPRESSORS
DEHYDRATORS**

**90-Day Guarantee on All Work
Prompt Service**

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WEST COAST REPAIR SERVICE

One Year Guarantee
Original Factory Specifications

COLD CONTROLS

Domestic\$2.50
Commercial 2.75

PRESSURE SWITCHES

Low or High\$2.75
Dual 3.75

EXPANSION VALVES

Automatic\$2.25
Thermostatic\$3.75

WATER VALVES

All Makes\$3.00

UTILITY THERMOSTAT CO.
4011 Halldale Ave. Los Angeles 37, Calif.

ton, Arizona, Nevada, Idaho, Utah and part of Montana.

★ ★ ★

Henry Valve Representatives

ROY C. YANTIS, General Sales Manager of Henry Valve Company of Chicago, has announced the transfer of Gordon W. Wheeler of the Ohio territory to the ter-



G. W. WHEELER

ritory which includes Northern Illinois and all of Wisconsin, Minnesota and Iowa. The Iowa territory will be taken over by Berthold Rossnagel



B. ROSSNAGEL

who will make his headquarters at the Dayton Biltmore Hotel, Dayton. Mr. Rossnagel was formerly with the Crosley Division of Avco Corpo-

ration where he held positions in engineering and production.

★ ★ ★

Corbin with Kramer

KRAMER Trenton Co., Trenton, N. J. announces the appointment of M. E. Corbin as direct factory representative in the territory covering Ohio, Western Pennsylvania, West Virginia and Western Michigan. He will handle the Kramer line exclusively.

Mr. Corbin, known to many friends as Joe, has had an extensive and varied experience in the



JOE CORBIN

refrigeration field. After graduating from the Engineering School of the University of Maryland, he has been connected with such companies as Carrier and General Electric. During the war he held a commission in the Navy, and worked on standardization of refrigeration equipment.

Headquarters will be set up in Cleveland, Ohio, with a temporary address at 1450 Elbur Street, Lakewood 7, Ohio, and phone, Lakewood 0411. Hugo C. Smith, who formerly covered the above

territory, will no longer represent the Kramer Trenton Company.

★ ★ ★

Dewey Is Tyler Service Manager

THE Tyler Fixture Corporation recently announced the appointment of Dewey Rhinehart as General Service Manager.

To qualify for this position, Dewey has accumulated a wide knowledge of refrigeration through long years of varied experience.



D. RHINEHART

In 1925 Dewey was associated with the Delco Light Company, Dayton, Ohio, as a member of the traveling repair group. He serviced both Delco Light and Frigidaire products. When Frigidaire started the manufacture of commercial refrigeration equipment, he was appointed to the Service Technical Division and spent many years specializing on field installation service and educational problems applicable to all commercial products.

Early in 1936 he accepted a position with Brunswick - Balke - Collender Company where he organized and managed a

Rebuilding Service

PARTS AND EQUIPMENT RECONDITIONING

The Premier SELF ALIGNING VALVE GRINDING KIT

Makes it easy to grind, finish and test recessed or flush valve seats (piston or flap-per jobs). Fast. No more tire-some hand lapping. Saves buying new parts.



"Couldn't Get Along Without It"
"Have used your kit for three months and do not see how I got along without it before. Saves me money and time waiting for replacement parts."

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Greensburg, Pa.

SEE THIS REVOLUTIONARY NEW TOOL
AT YOUR JOBBER

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HERMETIC REBUILDING

Motor and Compressor Service

Rebuilding Hermetically Sealed
Refrigeration units—all makes—all sizes.

Rebuilding and Rewinding
motors and Hermetic Stators—all
makes and all sizes.

Metalizing and Machine Shop
work of all kinds. General job work.

ALL WORK GUARANTEED. Prompt
service. Prices and shipping instruc-
tions sent on request.

BARGER **REFRIGERATION SERVICE CO.**

Established in 1930

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COLDSPOT INFORMATION Now You Can Successfully Rebuild Coldspot Units

Complete instructions covering repairing, re-
building compressors, refacing seals, charging,
do's and don't's, best methods, and a score of
other helpful hints.

A list of complete parts at wholesale prices.

A list of special tools that will save you
many dollars, as well as time.

Sent **FREE** to Servicemen and Jobbers.

PRECISION-BUILT TOOL AND PARTS CO.

4530 Gravois Avenue

St. Louis 16, Missouri

CONTROLS — VALVES **REPAIRED OR EXCHANGED**

We completely disassemble controls, clean,
test, check and replace defective or broken
parts, and set for proper temperatures.

Domestic Cold Controls (Modern).....\$3.00

Commercial Controls (Pres. or Temp.) 2.75

Automatic Expansion Valves..... 2.25

Thermostatic Expansion Valves..... 3.25

Automatic Water Valves..... 3.25

90 day guarantee • Prices F.O.B. Chicago

Refrigeration Control Service

5056 S. Archer Ave.

Chicago 32, Ill.

With best wishes for
A Merry Christmas
and
Happy New Year

KEYSTONE ENGINEERING CORP.
4140 CHICAGO AVE. CHICAGO 51, LL.

national service department.

In 1941 he joined Murphy and Miller, Inc., in Chicago and built the first Independent Service Organization.

Rhinehart is well known throughout the refrigeration industry, and over the years has trained thousands of servicemen.

★ ★ ★

Bonneville Gets ACRMA Post

AT THE recent general meeting in Hot Springs, Virginia, E. A. Bonneville, Sales Manager of the Room Air Conditioner Division of the Fedders-Quigan Cor-



E. A. BONNEVILLE

poration, Buffalo, N. Y., was elected Chairman of the Room Air Conditioner Section of the Air Conditioning and Refrigeration Machinery Association.

The ACRMA Room Air Conditioner product-section, under Mr. Bonneville's leadership, plans a broad program of engineering, marketing, and other important activities affecting this rapidly-growing division of the air conditioning industry.

Grand Rapids Appointments

APPOINTMENT of David Ralston as Sales Manager in charge of open stock commercial refrigerator hardware has been announced by George B. Nelson, General Manager of Grand Rapids Brass Company.

Mr. Ralston has had a long and varied experience in the field of refrigeration sales and service. He joined the Frigidaire organization in 1925, and three years later moved to Norge as Service Manager in the Boston area, soon thereafter becoming national service representative for this company. From 1934 to 1939, he served Norge in London as sales manager for Europe and South Africa, returning to the home office in Detroit when the outbreak of war curtailed this foreign market.

From 1945 until joining Grand Rapids Brass Company, he conducted his own manufacturing business in Grand Rapids, where he developed and distributed a number of small appliances and refrigerator accessories.

Harry DeGraaf, previously sales manager, has now been placed in charge of contract sales of refrigerator, automotive, stove, and plumbing hardware for both Grand Rapids Brass Company and for its parent corporation, Crampton Manufacturing Company.

Mr. DeGraaf began his business career with Seidman and Seidman, widely known economists and accountants. He entered the refrigeration field in 1934

with Winters and Crampton, joining the Grand Rapids Brass Company in 1945.

★ ★ ★

Rylander With Chase

CHASE Refrigeration Supply Company, 546-48 W. 119th Street, Chicago, announces the opening of a Department devoted exclusively to Sales Promotion activities.

Jack Glass, Mgr., has appointed Lloyd C. Rylander, formerly of C. R. Markham Advertising, Chicago, to head the new department. In his former association Mr. Rylander has had close contact with the refrigeration ecutive on numerous space accounts and in preparation of wholesale refrigeration supply catalogs. His plans now include a monthly publication under the Chase Refrigeration Supply Company Masthead. Distribution will be made to all names on the Chase mailing list. Features of the publication will include current price information applicable to the Chase Refrigeration Supply Company Catalog, service news of interest, service tips, special merchandise offerings, etc.

A more extensive distribution of manufacturers literature is also contemplated. Also high in priority of tasks to be completed by the new sales promotion department is the Chase Refrigeration Supply Company wholesale catalog for 1949.

REPAIR YOUR OWN SEALED UNITS with ATLAS

*Guaranteed Motor-Compressor
rebuilding service!*

Burned out and stuck-up hermetic motor-compressor assemblies (domes) completely re-built, dehydrated and evacuated with the correct oil charge sealed in and shipped to you ready to assemble to unit.

\$27.65

General Electric
Norge
Crosley
Frigidaire

Kelvinator
Westinghouse
Stewart-Warner
Philco

Ship motor-compressor assemblies in returnable cartons, prepaid.

WE ALSO RE-BUILD COMPLETE HERMETIC UNITS.

Other prices and shipping instructions will be sent on request.

ATLAS REFRIGERATION SERVICE INC.

6949 South State Street

Telephone: HUDson 3-0561

Chicago 21, Illinois

Troubled with Terminal Leaks on
CROSLY
SEALED UNITS?



USE THE
Jiffy Terminal
One piece, internal
thread design—no spe-
cial tools
3 terminals with gaskets
\$4.00

See your jobber or order direct
DETROIT SEALED-IN PARTS CO.
19191 Rogge, Detroit 12, Mich.

**COMPRESSORS
REBUILT
SIZES TO 15-TON**

Exchanges on most models up to 1 Ton.
Emergency service when necessary.

COLDSPOT REBUILDING

HERMETICS—COLDSPOT & CROSLY

LARGEST AND MOST COMPLETE SHOP

IN MICHIGAN

REFRIGERATION WHOLESALERS

Complete Stock—Parts—Tools—Supplies

LEE EQUIPMENT COMPANY

5422 Hamilton Ave.

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Overhauling & Repair
of
Refrigerating Equipment
**COMPRESSORS OUR
SPECIALTY**

Work guaranteed

**COMMERCIAL
MACHINERY CO.**

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**COLDSPOT
REBUILDING SERVICE**

Hermetic and Open Type Units

One Year Guarantee

WRITE FOR PRICE LIST

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Flint 7, Michigan

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a NAME TO REMEMBER for

Repairs CONTROL REPAIR SERVICE

Gas and electric refrigeration controls
reconditioned equal to NEW at a small
cost. All work guaranteed for one year!

**Specialists in Electric and Gas
Thermostatic Controls**

YOU HAVE TRIED THE BEST — NOW TRY THE BEST!

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242 West 70th Street • New York 22, N. Y.

HERMETIC REBUILDING SERVICE (ALL MAKES)

One year guarantee
Write or phone for prices

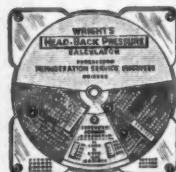
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REFRIGERATION SERVICE, INC.**
5851 Irving Park Road
Phone Palisade 5-6118
Chicago 34, Illinois

For men who want to know more about

AIR CONDITIONING, REFRIGERATION & HEATING

Write for free booklet and class
starting dates

Detroit Air Conditioning Institute
4125 Grand River Detroit 8, Mich.



IT'S EASY TO SPOT WHAT'S WRONG

With this vestpocket
Calculator you can
quickly determine the
correct head pressure
when the suction pres-
sure and refrigerant are
known.

POSTPAID \$1.00

NICKERSON & COLLINS CO.
435 N. WALLER, CHICAGO 44, ILL.

Classified Ads

Rate: \$2.50 for fifty words or less, 40 cents
for each additional ten words or less.

FOR SALE—Well established Refrigeration and Appliance Sales and Service establishment in Northern Wisconsin. Building for sale or lease includes living rooms, garage, warehouse, shop, office and store. Virgin R.E.A. territory. Over \$55,000.00 yearly. Reason for selling, poor health. Stock and equipment at inventory cost. Address Box DC-2, The Refrigeration Service Engineer, 433 N. Waller Ave., Chicago 44, Ill.

FOR SALE—Three man Refrigeration Service Shop. Completely equipped and stocked. Doing a large volume of business. Two panel trucks; Ford V8 and Dodge. Also beautiful one floor plan home on adjoining lot. Completely modern. Automatic heat. An ideal set up for man and wife to operate with the aid of present personnel, whom are steady, hard working and know the business. All this and more for only \$15,000.00. A. J. Cryder, 31 Mix Ave., Columbus 4, Ohio.

SUBJECT TO PRIOR SALE:

Hermetic Chieftain units

1/8 H.P., \$44.50 — 1/5 H.P., \$48.50

Other well known hermetics:

1/5 H.P., fan cooled.....\$52.50

1/4 H.P., fan cooled, light duty.....57.50

1/4 H.P., fan cooled, heavy duty.....59.50

1/3 H.P., fan cooled.....69.50

Open units, standard makes:

1/4 H.P.\$54.50

1/3 H.P.64.50

1/2 H.P.84.50

All open units are 60 cycle, single phase.

All above units new, carrying factory war-

ranty.

Write for unit list.

Minneapolis-Honeywell Dual Pres-

sure Control\$4.50

Detroit Lub. low pressure control4.25

Kerotest packed line valve with

hexagon cap, 3/8" or 1/2"85

Superior Driers, 1/4" flare, 1-1/4" x

5-11/16"75

G. E. Blower fan motor with 10"

blade4.50

U. S. Freon Gauge, 4-1/2" case, 30"

Vac., 150# or 300#, with red

warning hand, mounting holes.4.50

1 Set U. S. Freon Gauge, 2-1/2" case,

1-100# and 1-300#, compound

recal. with mounting holes.3.50

Scientific Instrument Co. 4-1/2" face

dial thermometer, 60" tube, minus

40 to plus 120.....4.50

Kramer—W10 panel blower complete.30.00

Davison 5 lb. can refrigeration

Silica Gel1.10

Cold plates, 1-30"x55", 2-30"x84",

3 to a set.....35.00

WALTER W. STARR

1207 George Street Chicago 13, Illinois

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USE A CLASSIFIED AD
Quick Results • Low Cost

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DAVISON *Refrigeration Grade* SILICA GEL

Processed especially for the dehydration of refrigerants



Ask your jobber for dehydrators charged with PA 100, Davison Refrigeration Grade Silica Gel . . . he also stocks it in the can with the blue label.

PA 100 gives you 7 big advantages

that point the way to freedom

from drying problems. **1.** maximum

capacity . . . **2.** instant action . . . **3.**

removal of acids and corrosive com-

pounds . . . **4.** freedom from caking

. . . **5.** freedom from channeling of

refrigerant . . . **6.** will not attack

metals or alloys . . . **7.** dust-free drying.

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1/4 H.P., fan cooled, light duty.....\$7.50

1/4 H.P., fan cooled, heavy duty.....\$9.50

1/3 H.P., fan cooled.....\$9.50

Open units, standard makes:

1/4 H.P.\$54.50

1/3 H.P.64.50

1/2 H.P.84.50

All open units are 60 cycle, single phase.

All above units new, carrying factory warranty.

Write for unit list.

Minneapolis-Honeywell Dual Pres-
sure Control.....\$4.50

Detroit Lub. low pressure control.....4.25

Kerotest packed line valve with
hexagon cap, 3/8" or 1/2"......85

Superior Driers, 1/4" flare, 1-1/4" x
5-11/16"......75

G. E. Blower fan motor with 10"
blade.....4.50-

U. S. Freon Gauge, 4-1/2" case, 30"
Vac., 150# or 300#, with red
warning hand, mounting holes.....4.50

1 Set U. S. Freon Gauge, 2-1/2" case,
1-100# and 1-300#, compound
recal. with mounting holes.....3.50

Scientific Instrument Co. 4-1/2" face
dial thermometer, 60" tube, minus
40 to plus 120.....4.50

Kramer—W10 panel blower complete.....30.00

Davidson 5 lb. can refrigeration
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3 to a set.....35.00

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January to December, 1948

Volume Sixteen

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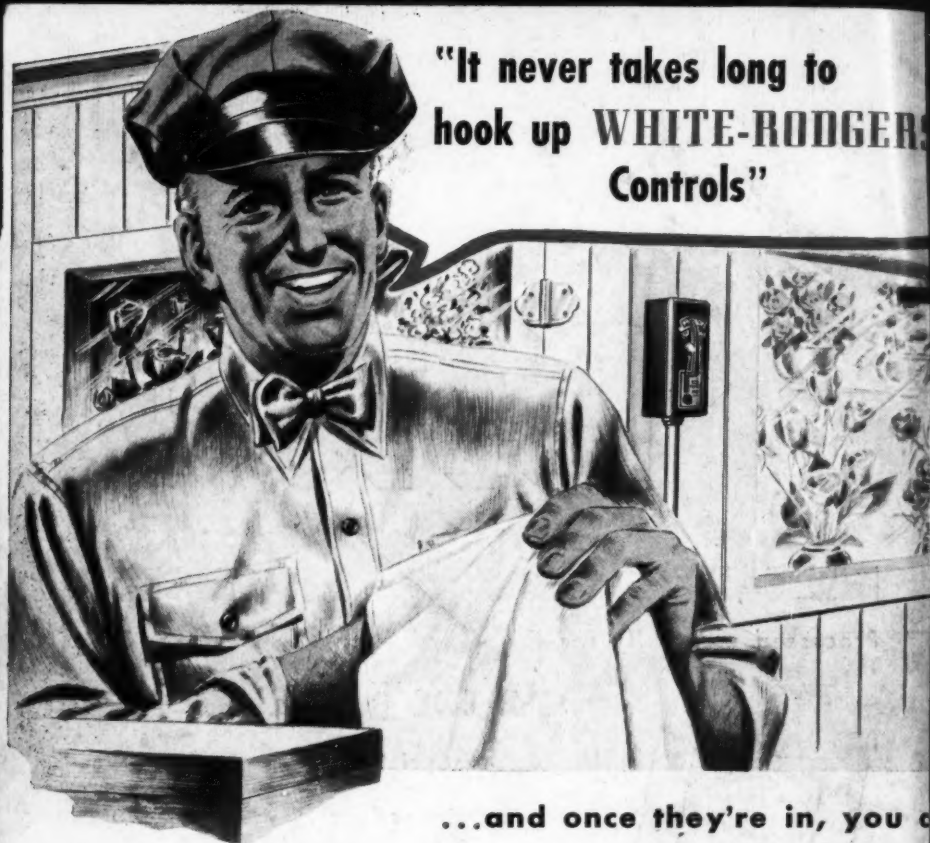


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